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An evaluation of the Flathead Valley economy; past present and future, is presented in terms of employment, unemployment,income, and population. There is a series of closer looks at the performance and current issues in each major economic sector. This report is part of the environmental impact study which was done to assess the impacts of population growth and proposed natural resource development on the Flathead River Basin.

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THE FLATHEAD BASIN:
AN ECONOMIC ASSESSMENT

Submitted To: The Steering Committee for the Flathead River Basin Environmental Impact Study and the U.S. Environmental Protection Agency

Submitted By: Montana Department of Administration

May 15, 1982

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1 INTRODUCTION

The well-being of any locality is closely, but not exclusively, tied to economics. Anticipating the future of the Flathead economy is important to local decision makers in government and in private business. The events of the past two years have vividly reinforced the fact that the economy is unsure and often influenced by events beyond our immediate control. Large-scale layoffs in the timber industry, and the 1979 decline in tourism related to gas availability and price are reminders of how suddenly lives can be changed as a result of national and international events.

The purpose of this document is to provide an evaluation of the Flathead Valley economy; past, present and future. An examination of the performance of the local economy in terms of employment, unemployment, income, and population then is first presented, followed by a series of closer looks at the performance and current issues in each major economic sector. Long-term growth scenarios are also discussed. The final sections focus on the economic development potential in the region and how local leaders may affect the growth of the area. The intent of this report is not to recommend directions but to summarize facts and issues that will aid the decision makers who will help shape the future of the Flathead Basin.

2 COMPARATIVE GROWTH

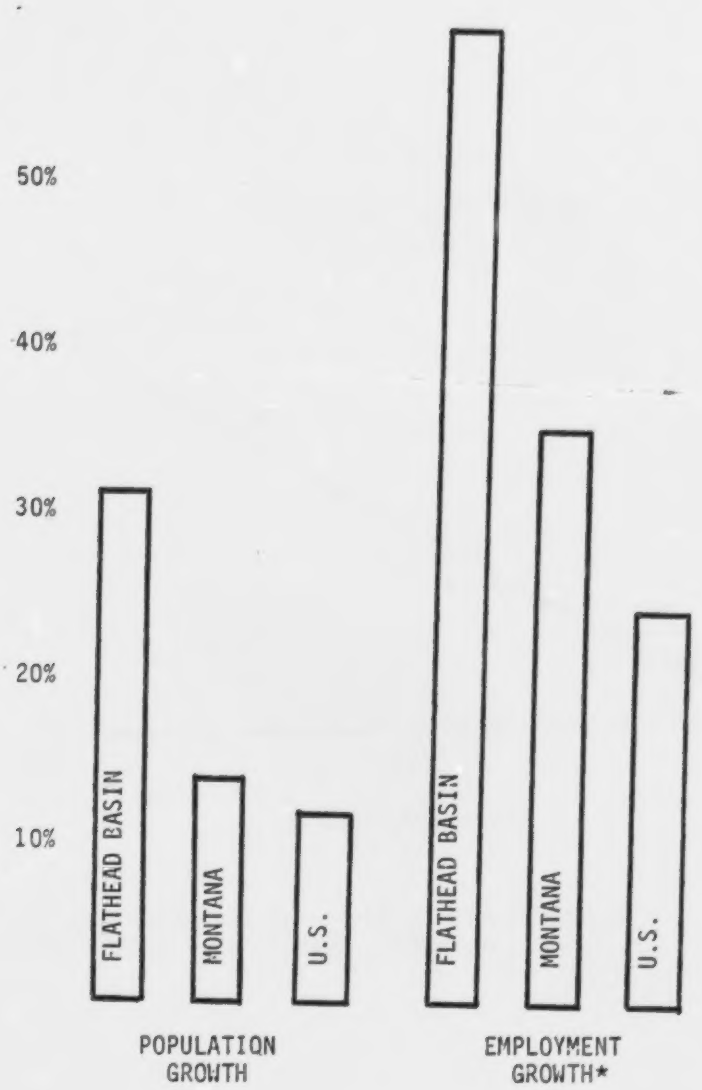
2.0 SOME GENERAL PATTERNS

The Flathead Basin (Flathead, Lake and portions of Sanders and Missoula Counties) has experienced much more rapid growth than either the state or national norm. Figure 2.1 illustrates how the local economy outpaced both Montana and the United States by a factor of nearly two to one over the past decade. In order to either understand why such rapid growth occurred, or if such growth will continue in the future, it is instructive to distill the sources of growth into component parts. In other words, why did the growth take place?

Export base theory and the related concept of economic multipliers helps to point out why the local growth rate has been so high. This theory divides economic activity (income and employment) into two categories; "basic and nonbasic." Basic jobs or income bring money into the area, generally through exports. Local examples include agriculture, timber, primary metals (The Anaconda plant) and tourism. These sectors support the nonbasic category such as retail trade, services, and government related jobs. The principle assumption of the theory is that nonbasic income and employment trends are related to the overall performance of the basic industries. Figure 2.2 shows this link, i.e., nonbasic employment expands as basic jobs increase. A similar

FIGURE 2.1

COMPARATIVE GROWTH
(1970-80)



Sources: U.S. Bureau of the Census, 1980 Census of Population and Housing, Advance Reports, Final Population and Housing Unit Counts, Montana and United States Summary, issued February and April 1981 respectively.

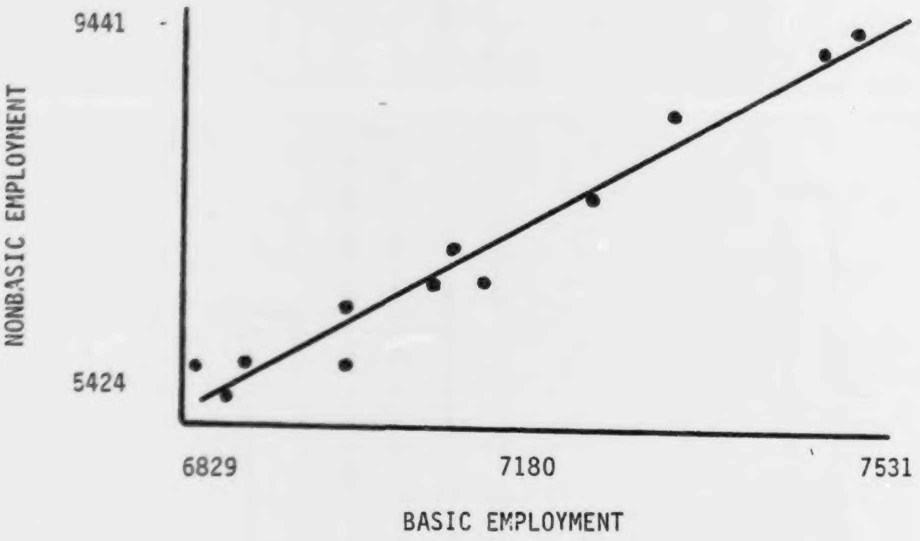
Montana Department of Labor and Industry, Montana Employment and Labor Force, February 1981.

U.S. Bureau of Labor Statistics, Monthly Labor Review, Vol. 104, No. 2, February 1981.

*Employment data not available for the portions of Sanders and Missoula Counties in the Flathead Basin.

FIGURE 2.2

NONBASIC/BASIC EMPLOYMENT
FLATHEAD COUNTY



Source: Derived from U.S. Bureau of Economic Analysis, Regional Economic Information System, unpublished employment data, 1967-1979.

link also exists between changes in basic employment and population, i.e, basic employment rises and population increases--basic employment falls and population declines.

The Flathead area's population grew rapidly last decade since the area's basic economic sectors...timber, tourism, and primary metals...were all expanding. Not surprisingly, this expansion was much greater than that experienced statewide. From 1968 to 1978, for example, basic jobs statewide increased 8.7 percent while local basic employment was up 15.2 percent. Basic employment increases by economic sector are shown in Table 2.1

TABLE 2.1
Components of Basic Employment Change
(1968-1978)

	Flathead Basin	State
Agriculture	-308	-7652
Mining	5	1420
Construction	169	341
Wood Products	154	1889
Other Manufacturing*	109	342
Transportation & Utilities	-122	647
Trade and Services**	348	8035
Government***	-207	-1514
Tourism/Travel	1288	7424
	+1436	+10,932

Source: Derived from U.S. Bureau of Economic Analysis, Regional Economic Information System, unpublished employment data.

Note: * Includes Primary Metals
** Includes Non-farm Proprietors (non-agricultural self-employed persons)
*** Includes Military

The Flathead region accounted for about 19 percent of Montana's entire population growth since 1970. The area's total population change between 1970 and 1980 was exceeded only by Yellowstone County and the Missoula area. Additionally, the Valley's rate of increase (31%) over that decade was surpassed by only a few counties; Ravalli (56%), Rosebud (64%), Jefferson (34%) and Gallatin (32%).

Table 2.2 and associated Figure 2.3 illustrate how local population growth compared with other Montana counties. Table 2.2 and Figure 2.3 also point out some rather interesting characteristics about growth in Montana. During the 1950s and 1960s employment growth in most areas of Montana was very slow. Growth in jobs was not keeping pace with the natural population increase, i.e., births less deaths. As a result, many Montanans went looking for work elsewhere. The situation during the last decade was different. Statewide employment expansion was sufficient to halt Montana's long-term pattern of out-migration. In fact, during the 1970s more people moved into Montana than moved out. This in-migration was concentrated in a relative handful of Montana's 56 counties, again shown in Table 2.2. For all practical purposes, all of Montana's population growth during the 1970s occurred in a dozen or so areas. Most other counties, many of them rural and loosing agricultural employment, still experienced out-migration. While the state's overall economic performance was much improved

TABLE 2.2

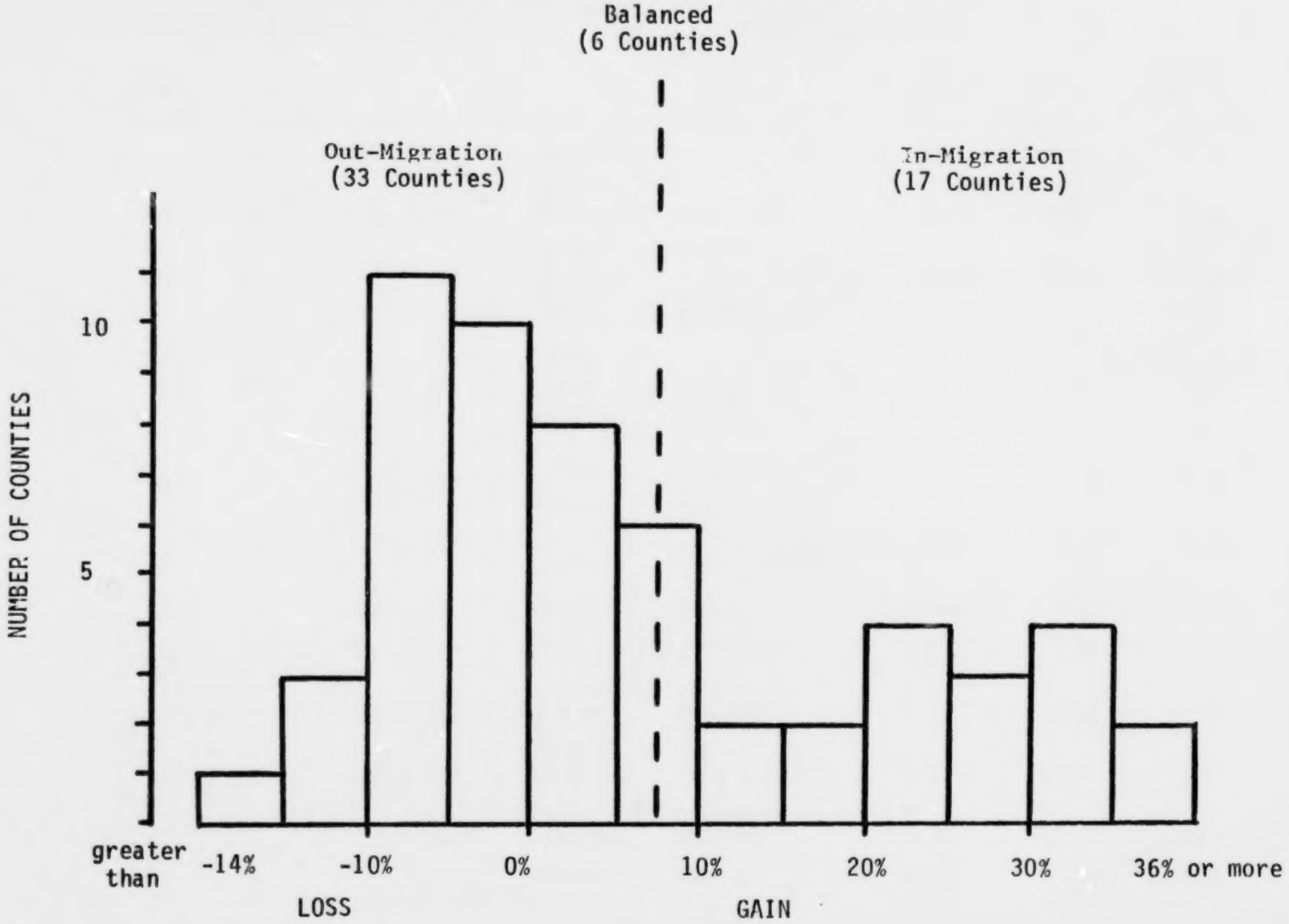
POPULATION GROWTH FOR MONTANA COUNTIES

Group	Number of Counties	Population Growth 1970-80	Counties			Population Growth 1970-80	Percent of Statewide Growth 1970-80	Percent of Population 1980	Migation 1970-80
1	2	Greater than 36%	Rosebud	Ravalli		11,951	13.0%	4.1%	+10,214
2	4	31% to 36%	Flathead Lake	Gallatin Jefferson		29,268	31.8%	15.4%	+21,478
3	3	25% to 31%	Broadwater Missoula	Lewis & Clark		28,252	30.7%	15.6%	+20,256
4	4	21% to 26%	Mineral Yellowstone	Richland Sanders		25,373	27.6%	16.9%	+16,256
5	2	16% to 21%	Mussellshsell	Stillwater		1,660	1.8%	1.2%	+949
6	2	11% to 16%	Carbon	Park		2,482	2.7%	2.6%	+928
7	6	6% to 11%	Big Horn Golden Valley	Custer Teton	Madison Sweet Grass	3,114	3.3%	5.1%	0
8	8	1% to 6%	Blaine Dawson Fergus	Hill Meagher Pondera	Powell Prairie	2,434	2.6%	8.6%	-3,100
9	10	-4% to 1%	Beaverhead Judith Basin Glacier Wibaux	Granite Cascade Liberty	Lincoln Phillips Roosevelt	1,569	1.7%	18.1%	-13,793
10	11	-9% to -4%	Carter Chouteau Petroleum Fallon	Garfield McCone Daniels Sheridan	Toole Treasure Wheatland	-2,309	-1.7%	4.3%	-5,380
11	3	-14% to -9%	Powder River Valley	Silver Bow		-5,452	-5.9%	6.5%	-10,239
12	1	Greater than -14%	Deer Lodge			-3,134	-3.4%	1.6%	-4,464
TOTAL						+92,070	100.0%	100.0%	+33,105

Sources: U.S. Bureau of the Census, 1980 Census, Final Population and Housing Units Counts. Migration estimates by Western Analysis, Inc., Helena, Montana.

FIGURE 2.3

NUMBER OF COUNTIES BY POPULATION GROWTH RATE



Source: Derived from Table 2.2.

(the 1970s versus the 1960s) growth was far from uniform in a spatial sense. The top 14 counties, those with over a 20 percent population gain between 1970 and 1980 accounted for:

- 97 percent of all population growth, and
- 98 percent of all basic employment growth

These growth-centers, and their sources of growth are listed in Table 2.3.

TABLE 2.3

GROWTH CENTERS AND SOURCES OF GROWTH

Growth Center	Counties	Population Change 1970-80	Income Adjusted Basic Employment Change 1970-80	Growth Sources
Billings	Yellowstone	20,668	5,056	Trade/Manufacturing/ Transportation/Tourism
Missoula	Missoula/Sanders Ravalli/Mineral	28,136	4,025	Construction/Wood Products Transportation/Trade/Tourism
Helena	Lewis & Clark/ Jefferson/Broadwater	12,290	1,826	Primary Metals/Utilities/ Government/Tourism
Bozeman	Galatin/Park	11,823	2,352	Construction/Wood Products/ Electronics/Transportation/ Trade/Tourism
Kalispell	Flathead/Lake	17,117	1,933	Primary Metals/Wood Products/ Tourism/Trade
Colstrip/ Decker	Rosebud/Big Horn	4,906	2,044	Coal/Utilities/Construction
	TOTAL	94,940	17,296	

Sources: U.S. Bureau of the Census, 1980 Census; and Research and Statistical Services Bureau, Montana Department of Administration, MASS II Model.

2.1 A CLOSER LOOK AT SOURCES OF LOCAL GROWTH

Sources of growth vary from community to community. While the definition of "basic" employment and income remain the same, what is "basic" in one area may not be "basic" in another. Table 2.4 summarizes the sectors that are basic (bringing money into the local economy) in the Flathead Basin. The wood products industry is the largest basic employer in the area, agriculture is next, then tourism, primary metals, retail trade, etc. The ranking changes somewhat when the employment levels for each sector are adjusted for differences in income. For example, tourism is estimated to account for about 20 percent of total basic jobs in the area but, less than 10 percent of the total basic income. Tourism jobs typically pay "about" one-half the norm for basic jobs. Wood products jobs pay more than the norm. These adjustments are incorporated in Table 2.4 under the column labeled income adjusted. Comparisons of the relative size of the basic sectors provides one view of what drives the local economy.

A second and more meaningful measure of the relative impact of the various basic sectors is to look at which sectors are actually growing. This approach results in a different interpretation. Figure 2.4 shows that growth in the area was the result of expansion in primary metals, wood products, tourism, and to lesser degree retail trade--nonresidents purchasing goods and services in the county.

TABLE 2.4

Relative Importance of Basic Sectors
(Flathead and Lake County Total)
1978

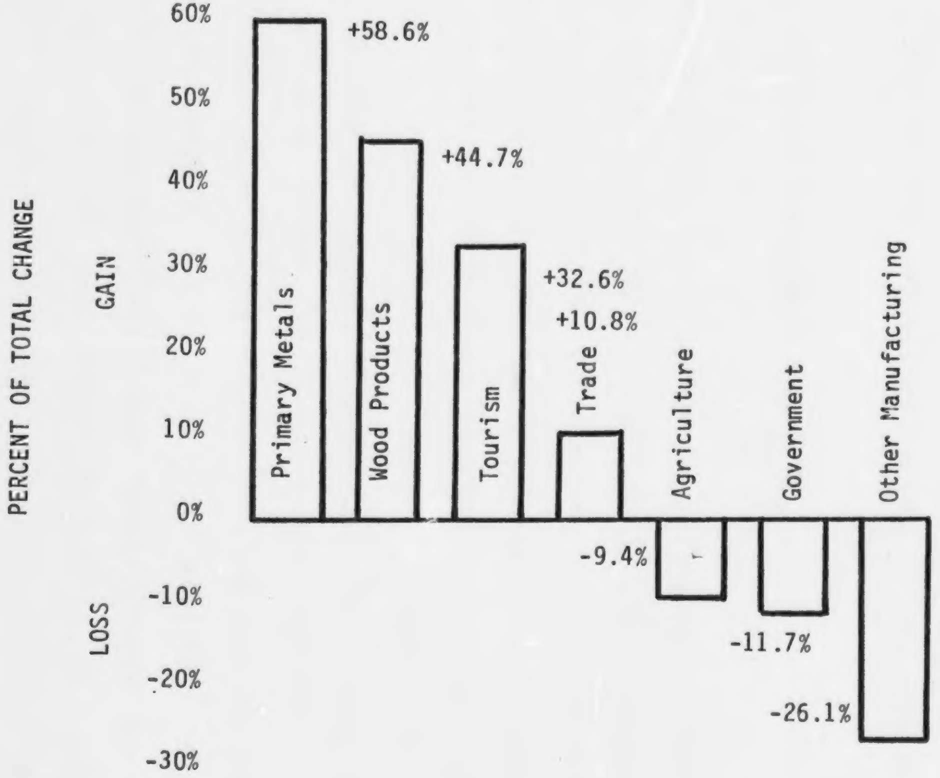
	Percentage of Total	
	Unadjusted Basic Employment	Income Adjusted
Agriculture	20.8%	20.0%
Mining	0.2	0.3
Construction	4.7	5.1
Wood Products	23.2	28.4
Primary Metals	12.3	18.2
Other Manufacturing	2.5	2.4
Transportation/ Communications & Utilities	5.2	8.1
Trade and Services	11.0	8.3
Government	0.2	0.2
Tourism	19.9	9.1
Total	100.0%	100.0%

Source: Montana Department of Administration, MASS II Model.

Note:* Income adjustments are based on state averages. These adjustments appear to overstate the local importance of agriculture. This issue is discussed later in the section 5.1. The reader is advised to review Table 2.20 and Figure 5.1 for additional comparisons.

FIGURE 2.4

RELATIVE BASIC GROWTH BY SECTOR*
FLATHEAD BASIN
(1968-78)



Source: Montana Department of Administration, MASS II Model.
*Note: Income adjusted basic employment

Agriculture, government, and other manufacturing were loosing employment--in effect retarding overall growth. It is important to recognize, however, that agriculture, federal government, and light manufacturing are important economic sectors within the local economy. Collectively these industrial groups represent or support 23.5 percent of all activity in the area even though they are not growing. The decline in other manufacturing from 1968-78 was the result of a one-time plant closing (a camper/trailer firm). The decline in agriculture is part of a long-term and continuing adjustment in farm size due to increasing productivity, i.e., fewer and fewer workers required to produce an increasing amount of output. Each basic sector and its long-run growth perspective is discussed in Chapters 3-5.

2.2 CHANGING EMPLOYMENT PATTERNS

Most of the employment growth in the Flathead Region, Montana and throughout the nation has occurred in the service sector (public and private) as opposed to commodity producing businesses. In the Flathead area, only eight percent of all employment expansion between 1968-1978 took place in sectors which produce a tangible product, i.e., agriculture, mining, construction, and manufacturing. Ninety two percent of all growth resulted from expansion of the service sector--retail trade, professional services, finance, trucking, government, etc. Table 2.5 illustrates this pattern of uneven growth across economic sectors.

TABLE 2.5
Flathead Basin Employment

	1968	1978	Change	Percent of Change
Farm Related	2618	2270	-348	-4.1%
Mining	17	22	5	0.0%
Construction	798	1445	647	7.7%
Manufacturing	4030	4425	395	4.7%
Transportation & Utilities	1286	1511	225	2.7%
Wholesale - Retail Trade	3280	5434	2154	25.5%
Finance & Real Estate	375	861	486	5.8%
Services	1976	3989	2013	23.9%
Nonfarm Proprietors	2024	3526	1502	17.8%
Government	3441	4800	1359	16.1%
Total	19,845	28,283	8438	100.0%

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System.

Today, only 29 percent of the area's employed workforce is engaged in the production of commodities. The vast majority are involved with the exchange of commodities, with the provision of services, the transportation of products, or in the public sector. At the state level twenty four percent of all workers are employed in goods producing industries. The national figure for comparison is similar at twenty six percent of the total employed labor force.

This uneven growth--commodity versus noncommodity--may be puzzling to those who believe that services and trade jobs can come only as a result of industrial development. It is important to remember that at the turn of the century, the majority of the national labor force was employed in some form of primary production, i.e., food, lumber, metals, etc. These industries have experienced rapid productivity gains, requiring relatively fewer production workers for an increasing amount of either physical or real dollar output. Also, overall income has increased, both in Montana and nationally, bidding up the demand for nonbasic activity. As a related phenomenon, the state and national became increasingly urbanized.

More recently, there has been a large increase in the labor force as a result of a change in the age structure of the population. The "baby boom" has resulted in more people entering the labor force than ever before. The age effect, coupled with the fact that more women are working outside the home, has greatly expanded the number of individuals seeking employment. The commodity producing industries, where productivity has grown the most, have been unable to provide employment for these new workers. The service and trade sectors have not experienced this rapid growth in productivity and have largely absorbed these individuals. Simultaneously, consumption of the output of the service and trade sectors has grown. Public and private sector services more often are substituted for activities once provided in the home. Purchases by both businesses and final consumers over time have shown a significant increase in "nonmaterial" consumption and employment. Furthermore, it is likely that this pattern of growth will hold in the future. Although it is true that many of the positions offered in these sectors have been part-time, even after adjustment to full-time equivalents, the rate of increase in employment has been great.

2.3 EMPLOYMENT MULTIPLIERS AND CHANGING EMPLOYMENT MIX

The shift from a goods producing to a service oriented economy does not, however, detract from the export base theory of growth. Areas which have increases in basic employment or income will have comparatively more rapid expansion in nonbasic employment and therefore total jobs. Conversely, local economies with a declining base will not have normal secondary expansion or very likely, will experience an actual decline drop in nonbasic jobs. The service shift has, nevertheless, affected the number of nonbasic jobs that can be supported by a basic job. For example, in 1968 a basic job supported .98 nonbasic jobs in Flathead County and .90 nonbasic jobs in Lake County. By 1978, the most recent information that we have, this ratio had increased to 1.35 and 1.25 nonbasic jobs per basic job in each respective county. These ratios, commonly known as multipliers vary between economic sectors as shown in Table 2.6. The variations in the multipliers simply reflect income

TABLE 2.6

SELECTED EMPLOYMENT MULTIPLIERS
1978

	Flathead County		Lake County	
	Adjusted	Unadjusted	Adjusted	Unadjusted
Primary Metals	1.96	2.29	n/a	n/a
Wood Products	1.71	2.00	1.59	1.89
Tourism	.71	.83	.66	.78
Other Manufacturing	1.54	1.80	1.43	1.70
Federal Government	1.92	2.24	1.79	2.12
Agriculture	1.35	1.57	1.25	1.49

Source: Montana Department of Administration, MASS II Model
n/a = Not applicable

differences between sectors. That is, the multiplier for wood products is higher than tourism since the average wood products employee makes over two times as much as the typical worker in the tourism industry. Higher wages simply support more nonbasic activity. The Flathead county ratios are higher than Lake's since Kalispell is a trade-center. People from Lake County and the surrounding region buy goods and services in Kalispell which makes their multiplier higher and conversely the rural areas lower than the norm. (The affect of trade leakages is discussed in greater detail in Chapter 5.) As an example of how to interpret Table 2.6, if employment in wood products (Flathead County) increased by 100 the total employment impact would be:

Wood Products		+100
Non basic jobs	100 X 1.71 =	171
Total Impact		+271 jobs

Multipliers should only be applied when the effect is permanent. A short-term change in basic employment such as the current, but temporary downturn in wood products employment, will not have an immediate impact on secondary employment. Therefore, use of a multiplier is not appropriate. However, if the decline were permanent, the multipliers shown in Table 2.6 provide a good estimate of long-term local impact. Multipliers are no more than a convenient way to estimate the overall effect, primary and secondary, of a change in basic employment. The ratios reveal that a change in basic activity has a corresponding effect on other forms of employment (nonbasic) in the local area.

Two different types of multipliers are provided in Table 2.6--an unadjusted and an adjusted employment multiplier. The adjusted multipliers account for the fact that a nonbasic job pays less than a basic job. The unadjusted multipliers do not reflect this difference. The lower adjusted multipliers more accurately reflect the local impact of a change in employment. The higher unadjusted figures overstate impact since the nonbasic job effect does not account for part-time employment, a common occurrence in the nonbasic sectors.

How well does this theory hold in explaining growth patterns? Most of the county level nonbasic employment variation (throughout Montana) is associated with a corresponding county level increase or decrease in basic activity. The impact of basic jobs on the overall population level is even more pronounced. Areas simply do not grow without a basic employment or income stimulus. It is very important to keep in mind, however, that an area can experience some nonbasic employment growth if its basic employment level is constant. Remember, a basic job today supports more non-basic workers (many of them part-time) than it did a few years ago. The changing multipliers are all part of the service sector shift discussed above.

Of the 5391 job increase in nonbasic employment which took place between 1968 and 1978 in Flathead County, nearly two thirds of the increase was the result of changes in service sector orientation. The rest was attributable to basic job growth. If adjustments are made to reflect income differences between basic and nonbasic jobs; then 60 percent of the nonbasic expansion was the direct result of basic expansion; the other 40 percent stemming from changes in service concentration change. The overall impact of basic employment on growth is somewhat easier to relate to population change where nearly all population change was directly linked to basic job growth.

2.4 SIZE OF FIRM FOR NEW EMPLOYMENT

The shift from a commodity to a service oriented economy has resulted in a major shift in the distribution of jobs between big and small firms. No local data are available but in Montana and throughout the nation, it is the small firms which contribute crucially to new job creation. For example, nearly 75 percent of private employment in Montana is found in firms with fewer than 50 workers (see Table 2.7). Over 60 percent of the 1970-1976 growth in private employment occurred in firms of this size (see Table 2.8). The significance of small firms for employment growth nationally also is important to note. Their ability to add new jobs has increased relative to large businesses. Total jobs in businesses employing less than 100 people increased 13.2 percent between 1967-1972, compared with 8.9 percent for businesses employing over 1000 workers. A decade earlier large firms grew three times as fast as small firms.

Most of the new private jobs have been in small independent businesses. The data, however, should be interpreted cautiously nearly all of the local, state and national employment growth since 1970 took place in the trade and service sectors. At the local level, this type of expansion is to a great extent, a response to "basic" employment rather than a cause of growth.

TABLE 2.7

Montana Business Size Comparison
(Private Wage and Salary Employment*)
1977

Business Size (employees)	Percent of Total Establishments	Percent of Total Employment
1-4	63.0	16.8
5-9	18.3	13.3
10-19	10.7	16.2
20-49	5.7	20.4
50-99	1.4	8.8
100-249	0.6	10.2
250-499	0.1	3.5
500-599	0.1	3.0
> 1000	0.1	7.8
	100.0%	100.0%

Sources: Derived from U.S. Bureau of the Census, County Business Patterns, Montana Summary, 1976.
Research and Analysis Section, Montana Department of Labor and Industry, 202 and 790 employment series, 1977.

Note: * Excludes agriculture, government, and non-farm proprietors self-employed persons.

TABLE 2.8

Private Nonagricultural
Employment Growth By Size of Establishment
Montana
(1970-1976)

Number of Employees Per Establishment	Percentage of Statewide Employment Growth (1970-1976)
1-19	43.0
20-49	19.5
50-99	7.6
100-249	17.0
> 500	12.9
	100.0%

Sources: Derived from U.S. Bureau of the Census, County Business Patterns, Montana summary, 1976.
Montana Department of Labor and Industry, 202 and 790 employment series, 1970 and 1976.

2.5 UNEMPLOYMENT

The unemployment rate probably is the most frequently used statistic in economic discussions and perhaps the most misunderstood. Its calculation depends on two factors: the level of employment and the total size of the labor force. Data for the former are gathered regularly and can be accurately determined. But the "size of the labor force" is difficult even to define and its calculation requires many assumptions, e.g., who is actively seeking employment?

Table 2.9 provides recent unemployment rate data for the local area, the state and the nation. It is important to note that the unemployment rate in the state and throughout the nation has increased in the last several decades. This general rise has been primarily the result of the tremendous growth in the labor force since the mid 1960s. As mentioned earlier, the "baby boom" has resulted in more people entering the labor force than ever before. This effect, coupled with the fact that many women are seeking employment outside the home, has greatly expanded the labor force. The basic industries, where productivity has grown the most, have not been able to provide employment for these new workers. And as a consequence of increasing income and a rapidly expanding supply of workers, the service trade sectors have absorbed most, but not all of these new entrants into the labor force. Therefore, total employment growth has been somewhat less than the increase in the number of individuals seeking jobs, resulting in a long-term increase in the overall unemployment rate. But, as the impact of the "baby boom" fades, unemployment rates should improve.

As a result of these structural changes, it is difficult to say whether unemployment is "really" higher than it was ten or twenty years ago since our current rates are measuring a very different phenomenon. After adjustments are made for average hours worked, productivity per worker, and demographic waves, it is "possible" that real unemployment has remained constant.

TABLE 2.9

Unemployment Rates for the Civilian Labor Force

	Annual Average Unemployment Rates			
	Flathead Co.	Lake Co.	Montana	U.S.
1970	7.0%	6.7%	4.3%	4.9%
1971	6.9%	6.4%	4.8%	5.9%
1972	7.2%	5.5%	4.8%	5.6%
1973	7.0%	5.4%	4.8%	4.9%
1974	9.3%	6.4%	5.2%	5.6%
1975	10.2%	8.1%	6.4%	8.5%
1976	9.2%	7.2%	6.1%	7.7%
1977	8.8%	6.9%	6.4%	7.0%
1978	7.8%	6.5%	6.0%	6.0%
1979	6.9%	6.1%	5.1%	5.8%
1980	8.5%	7.1%	6.0%	7.1%

Sources: Montana Department of Labor and Industry, _Montana Employment and Labor Force_, February 1981.

U.S. Bureau of Labor Statistics, _Monthly Labor Review_, February 1981.

TABLE 2.10

Unemployment Comparison

	Unemployment 1976-1980 Average	Employment Growth Percent Change 1975-1980
Flathead	8.2%	32.5%
Lake	6.8%	22.4%
Montana	5.9%	16.6%

Source: Montana Department of Labor and Industry, _Montana Employment and Labor Force,_ February 1981.

Tables 2.9 and 2.10 indicate that local unemployment exceeds the state or national norm even though the area's employment growth has been comparatively rapid. This is an interesting phenomenon, but not unusual. There are substantial variations in the rate of unemployment at the county level. For example during 1975, unemployment rates ranged from a low of 2.5 percent in Daniels County to a high of 16.6 percent in Lincoln County--following the completion of Libby Dam.

Unemployment generally has been much higher in western Montana than throughout the rest of the state, particularly in the eastern agricultural region. This imbalance has existed for years. This persistent difference apparently has been the result of three factors--seasonality, employment growth and population change.

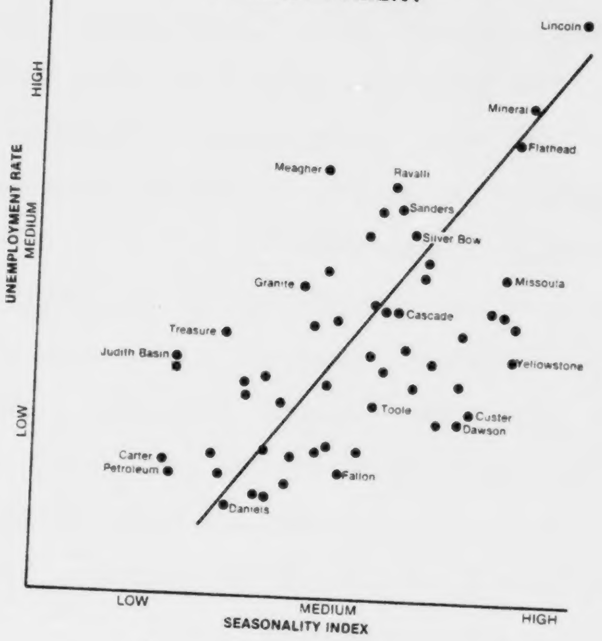
Employment in western Montana is subject to large seasonal variations--fluctuations in employment over the course of a year due mostly to climate and industrial mix. Large seasonal variations in employment mean that substantial numbers of workers will be unemployed during part of the year; this results in a higher annual rate of unemployment. Outdoor industries such as wood products-especially logging--are affected by severe winter weather and spring thaws; tourist-related activities, although increasing in the winter season, still are concentrated in the summer months as a result of custom and climate. The importance of these two seasonal industries in western Montana contributes to the area's high unemployment rate. Figure 2.5 illustrates the relationship between the seasonality of employment and annual rates of unemployment, and clearly shows the tendency toward higher unemployment rates in western Montana counties.

The data indicate, paradoxically, that counties with lower than average employment growth generally have low unemployment rates. Correspondingly, areas with high employment growth have higher than average unemployment rates. The data also show that areas with rapid population growth have high unemployment. Conversely, counties with slow population growth or declining population have lower than average unemployment.

No single variable fully explains, for example, why Montana's western counties have unemployment rates much higher than the eastern counties. However, all three variables (population growth, employment growth and seasonality) in combination explain much of the variation. There are no laws in economics, only general tendencies. In this instance, these tendencies are:

FIGURE 2.5

UNEMPLOYMENT AND SEASONALITY OF EMPLOYMENT



Source: Montana Office of Commerce and Small Business Development, Economic Conditions in Montana: Report of the Governor, 1980.

(1) If any area's population growth exceeds employment growth, unemployment will be generally high. This only makes sense; it is interesting to note, however, that employment growth is usually higher in areas of relatively high unemployment and that unemployment is lower in areas with slow employment growth. Areas of high employment growth also have high population growth which forces unemployment upward. Areas with slow employment growth usually have out-migration which tends to reduce the unemployment rate. These tendencies hold true throughout the nation as well as within Montana.

(2) Much of the county variation in unemployment appears to be the result of industrial mix. This factor is as important as either population or employment growth. If an area has a high concentration of seasonal industries, as is the case in western Montana, unemployment will be higher than an area with less seasonal influence.

Table 2.11 shows the seasonality of each industry for Montana and the nation. Note that the local economy has an even higher concentration in seasonal industries (wood products, construction, and toursim) than the state norm.

TABLE 2.11

Seasonality Comparison*
(Average 1960-1975)

	Montana Seasonality Index	United States Seasonality Index
Lumber and Wood Products	20%	8%
Primary Metals	15%	7%
Other Durables	19%	7%
Food and Kindred Products	20%	12%
Other Nondurables	7%	3%
Metal Mining	8%	6%
Coal and Other Non-metallic Mining	18%	10%
Oil and Gas	22%	5%
Construction	50%	20%
Railroad	8%	5%
Other Transportation	12%	4%
Communications and Utilities	7%	4%
Wholesale Trade	7%	4%
Retail General Merchandise	23%	25%
Food Stores	10%	5%
Automotive	11%	4%
Eating and Drinking	29%	12%
Building, Furniture, Misc.	14%	8%
Finance, Insurance and Real Estate	6%	4%
Hotels	55%	24%
Other Services	7%	5%
Federal Government	22%	4%
State and Local Government	8%	10%

Source: Derived from monthly state and national employment data, Montana Department of Labor and Industry, and U.S. Bureau of Labor Statistics.

* Note: Defined as percent variation per year from the yearly mean value; i.e., monthly high minus monthly low divided by the yearly average.

2.6 EMPLOYMENT AND POPULATION GROWTH

Natural population growth (births less deaths) is generally not related to economic activity. An area's birth rate is much more the product of social attitudes and lifestyle. While it is true that lower income classes have higher than average birth rates, the variation across states and counties is not a significant influence on population change. For similar reasons life expectancy is functionally related to lifestyle and stress. Income influences while present are not a major factor in determining an area's natural population growth.

The second component of population change -- migration-is very much related to relative economic growth. If an area is growing faster than the norm, the area will attract people. Jobs are available and people follow jobs. Those counties which have slow growth will lose population through out-migration. In these cases, job expansion is not keeping pace with the natural population (and labor force) growth and individuals are forced to seek work elsewhere. In Montana, 99 percent of the variation in county population levels is explained by county employment. There are only two Montana counties where county population is higher than one would expect, given the local employment base. These two counties are Ravalli and Lake where some "limited" non-employment growth has occurred. Lake County has a relative concentration of older individuals (suggesting retirement migration). This growth influence, however, has been relatively minor. This issue is discussed in more detail in the next section.

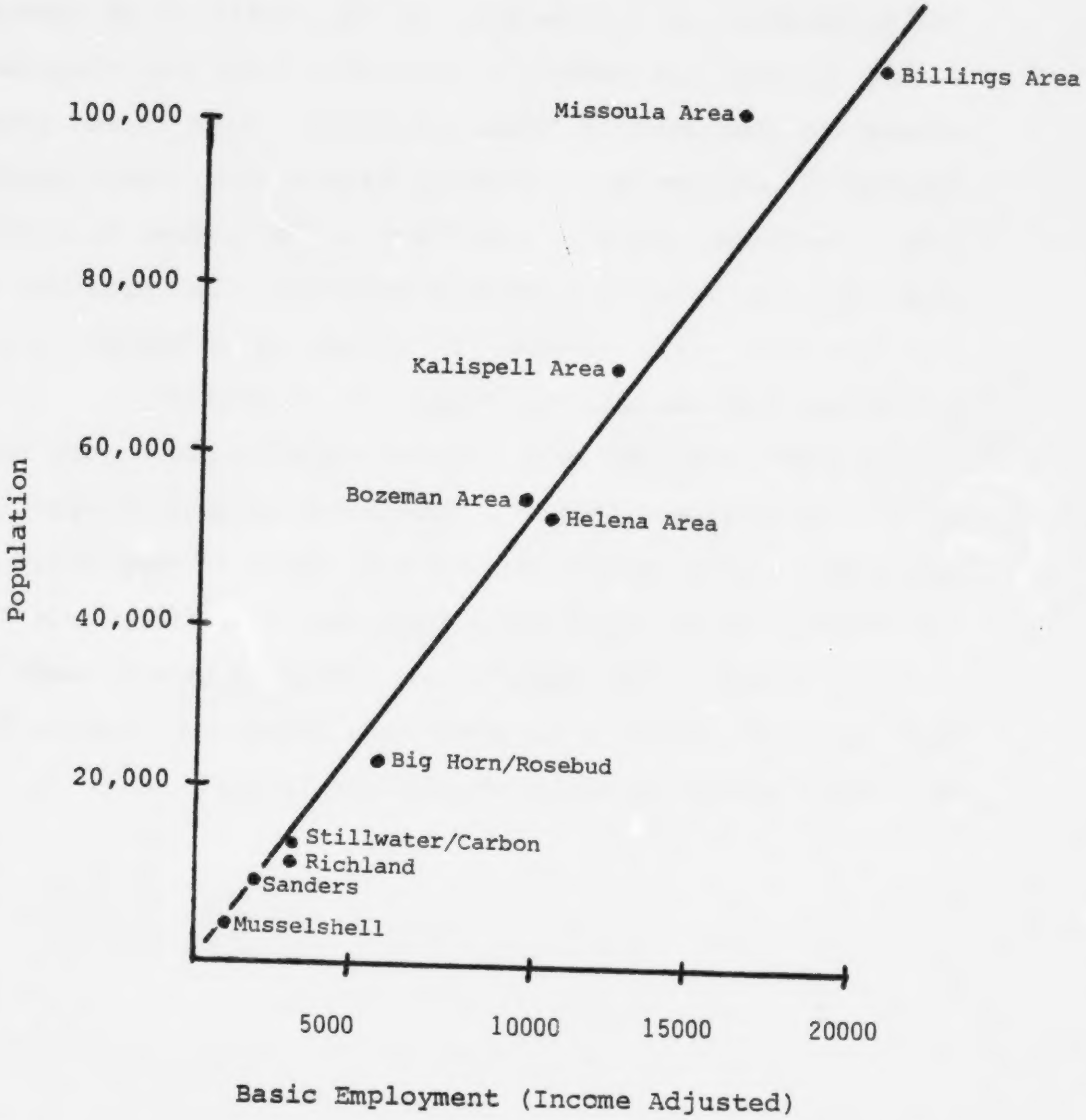
Figure 2.6 illustrates the link between population and basic jobs for those Montana counties which experienced population expansion exceeding 10 percent from 1970 to 1980. Essentially all of the statewide growth took place in these same counties. Note that the Missoula area (Missoula, Ravalli and Mineral Counties) is not exactly on the solid line shown in Figure 2.6. The point representing Missoula is above the line, indicating a higher poplation level than you would expect given the basic employment figure. Some non-employment related population (students) is present. People may be moving into the area without jobs. While such an event does occur it is important to realize that it is atypical.

While basic employment expansion and population growth are closely linked, the population effects of overall employment increases are more difficult to analyze. The population change resulting from growth in the nonbasic sector is generally much lower than that resulting from an increase in basic activity. In Montana, many of the jobs within the nonbasic sectors have been filled by women entering the labor force and, as a result, migration effects have been negligible. It is not surprising, then, that employment currently is growing much faster than population.

FIGURE 2.6

GROWTH AREAS AND

BASIC EMPLOYMENT AND POPULATION



Source: Montana Department of Administration, MASS II Model.

An additional basic job has several effects. First the new basic job has a direct impact. Commonly, an entire family unit is associated with a basic job. This direct effect accounts for approximately three people. In Montana, each basic job, however, supports approximately 5.5 people. The difference, or 2.5 people, is the result of an induced effect through the number of nonbasic jobs and resultant population supported by these positions. High income jobs, therefore, support more overall people than lower paying jobs. Although there is variation in the number of people supported per basic job between counties, the variation is for the most part related to commuting patterns; i.e., people may work in one county and live in another.

Between 1969 and 1979, income adjusted basic jobs grew by 2347 in Flathead County. This increase would support an additional 12,908 people (2347 x 5.5) which is very close to the actual 1970-80 population increase of 12,506 people for Flathead County. The export base theory of growth seems to hold up well. Table 2.12 shows the population ratios for each basic sector in Flathead and Lake County.

TABLE 2.12
Population Ratios
(Number of People per Basic Job)

	Flathead County	Lake County	
		Unadjusted	Adjusted
Primary Metals	8.1	n/a	n/a
Wood Products	7.1	8.5	7.1
Tourism	2.9	3.5	2.9
Other Manufacturing	6.4	7.7	6.4
Federal Government	8.0	9.6	8.0
Agriculture	5.6	6.7	5.6

Source: Montana Department of Administration, MASS II Model

n/a = Not applicable

The reader should note that the unadjusted number of people supported per basic job in Lake County is higher than in Flathead. The higher ratio is the result of two causes. First, there are more people over 55 in Lake County than the state norm--23.5% of the total population versus 19.8% at the state level. This suggests that approximately 700 individuals "may" have moved to Lake County for non-employment reasons. Also, there are fewer people working in Lake County (the result of the reservation) relative to the population base: 39 percent versus 45 percent at the state level. This is common in rural areas since some of the Lake County income flows to Flathead because Lake County residents shop in Kalispell. (These trade-flows are discussed in Chapter 5.) These two adjustments equate the ratios as shown in the adjusted Lake County column in Table 2.12.

As with employment multipliers, some discretion must be used when using population multipliers. Only permanent changes in basic employment affect population. For example, the temporary downturn in wood products employment will not immediately affect population. A long-term decline in this industry would, however, result in a population loss. Also, when a plant closes as was the case in Anaconda, Montana, the impacts can be less since many people may retire early and remain in the area. Some maintenance of the facility is necessary which also helps to offset the loss. Additionally not all people who work in a county live or shop in the same county. As a result, a large scale drop in employment will have a smaller impact than a crude population ratio would suggest. Based on the experience in Anaconda, Montana, when the smelter closed, the author recommends reducing the impact multiplier by half in a declining situation. Hypothetically, if 500 jobs in wood products were lost in Flathead County, the population would be closer to 1800 as opposed to 3600 as the multipliers in Table 2.12 infer. Without doubt, all simple theories have exceptions.

2.7 COMPONENTS OF POPULATION CHANGE

The previous section discussed one aspect of the nature of population change, i.e, the employment growth impact on population. The fertility and mortality components of population growth are also important.

Three drastic variations in the rate at which national population reproduces and increases itself have occurred in the past half century. The first was the "birth dearth" of the Depression years when total births dropped to about 2.5 million from an average of close to 3 million a year. During those years the number of children born to the average woman declined to close to 2.1 births per life time--the replacement level that would result in a stable population if maintained indefinitely. The second shift, the well-published "baby boom" of the post World War II era, witnessed a fertility rate of 3.8, and the number of births per year exceeded 4 million during the mid-1950's. The first, shift, often known as the "baby bust" has been marked by a progressively steep decline in the fertility rate. In 1976, a low point to date, the fertility rate was 1.77 with 3.17 million births occurring nation-wide that year. Since then, both the fertility rate and number of births have slightly increased, but the overall rate is still well below the natural replacement level. Nevertheless, some demographers anticipate that the fertility rate will increase in the future to approximately the replacement level by 1990. Although Montana's historical fertility and mortality rates have been slightly higher than the national norm, the dominant reason for the difference in population growth rates between Montana and the nation has been the result of migration. This has been true also for the Flathead area. Between 1970 and 1980, the author estimates that 12,800 individuals moved into the area.

Table 2.13 reveals the importance of in-migration for the Region as well as Montana between 1970 and 1980. Of the total population change in the local area, 75 percent of the increase was due to in-migration--new people. They came because of available jobs not just because the area is a nice place in which to live. At the state level, 36 percent of the increase was the result of in-migration. The importance of migration statewide is less significant than in the local area since overall Montana employment expansion was less. The natural growth estimates were based on Montana birth and death patterns since 1970, i.e, an eight percent expansion due to natural causes since 1970. More precise data on natural growth will be available within a year. County specific vital rates do not as a rule significantly vary from the state norm.

TABLE 2.13

COMPONENTS OF POPULATION CHANGE 1970-1980

	Natural Growth +	Migration =	Total Change
Flathead	3,100	9,400	12,500
Lake	1,200	3,400	4,600
Region	4,300	12,800	17,100
Montana	58,700	33,400	92,300

Sources: Derived from Bureau of Records and Statistics, Montana Department of Health and Environmental Sciences, and from the U.S. Bureau of Census, 1980 Census, Final Population Counts).

As mentioned earlier, some of the local growth in Lake County appears to have been the result of retirement. As shown below in Table 2.14. Lake County has relatively more older individuals. The proportion of the total population over 55 in Flathead is not, however, signficantly different from the state average.

TABLE 2.14

	Percent of Population over 55 years of age	Percent of Population Receiving Social Security Benefits
Flathead County	19.4%	8.5%
Lake County	23.5%	10.1%
Montana	19.8%	8.2%

Sources: U.S. Bureau of the Census, 1980 Census of Population and Housing, Summary Tape File 1A, Montana. Social Security Administration, unpublished 1980 county records, Helena, Montana.

Normally, most migrants are young. Table 2.15 illustrates that three-fourths of all migrants are under 35 years old. Thus as a result, those areas in Montana which have experienced long-term out-migration have higher than average median ages since the young people leave and the older individuals remain. Over an extended period, the loss of an area's youth (and often times talent) can further retard local growth prospects. Conversely, rapidly growing areas with high in-migration generally have somewhat lower median ages since younger individuals are moving in. In the case of Lake and Ravalli Counties (south of Missoula) the situation is somewhat different, some older individuals are migrating into these counties.

Table 2.16 shows the age distribution for Flathead and Lake Counties and the state. Tables 2.16 and 2.14 both indicate relatively more people in the higher age groups. As mentioned earlier, this occurrence may suggest retirement migration. It could also be indicative of past migration patterns. For example, Table 2.17 shows that during the 1950 to 1960 period 2,346 individuals left Lake County. This comparatively high level of out-migration given the county's small population base may explain why Lake County currently has more older people. That is, the people that left during the 1950's were young. Conversely, those individuals who stayed were relatively older--over 30 years old. Today these individuals would be in their 60s and 70s. In other words, the retirement migration argument may be of no consequence.

TABLE 2.15

MIGRATION TABLE
1975-1978

Age	Percent of Total
0-4	10.0%
5-9	9.8%
10-14	7.5%
15-19	7.0%
20-24	15.9%
25-29	15.1%
30-34	10.3%
35-39	6.4%
40-44	4.3%
45-49	3.2%
50-54	2.6%
55-59	2.3%
60-64	1.9%
65-69	1.9%
70-74	0.9%
75 >	1.2%
	100.0%

Source: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 331, "Geographical Mobility: March 1975 to March 1978," 1978.

TABLE 2.16

1980 AGE DISTRIBUTION

Age	Percent of Total Flathead	Lake	Montana
0-4	8.2%	9.0%	8.2%
5-9	7.9%	8.1%	7.7%
10-19	17.2%	17.9%	17.4%
20-29	17.3%	14.8%	18.5%
30-44	20.5%	17.6%	19.0%
45-59	14.1%	13.8%	14.0%
60-74	10.7%	13.8%	11.0%
75 >	4.1%	5.0%	4.2%
Total	100.00%	100.0%	100.0%

Source: U.S. Bureau of the Census, 1980 Census of Population and Housing, Summary Tape File 1A, Montana.

TABLE 2.17

NET MIGRATION

	Lake County	Flathead County	Montana
1970-80	+3,400	+9,400	+33,400
1960-70	+ 218	+3,308	-58,153
1950-60	-2,346	-3,564	-24,578

Source: U.S. Bureau of the Census, 1970-1980 estimates from Table 2.13

2.8 DEMOGRAPHIC WAVES

The unstabilizing effects of major changes in fertility rates coupled with volatile migration patterns, have and will continue to result in major waves in Montana's population. In the past, some cohorts, or age groups, expanded dramatically, but in the future they will shrink abruptly. Other cohorts will shrink and then expand much faster than the overall population level, all as a result of changes which took place years ago but are only now being felt. These waves are shown for Montana in Figure 2.7. Analysis of the local impact of the demographic composition of the population is included in the projections section of this report.

Demographer Denis Johnston of the Census Bureau has vividly depicted the "baby boom" as being similar to a "melon being digested by a boa constrictor...it will undergo strains and pose a succession of problems for the nation's institutions as it moves through the age cycle." A few examples of these strains so far have included:

-- Declining grade and high school enrollment.

-- Rising unemployment and inflation as a result of rapid increases in the number of new entrants into labor force.

-- A dramatic increase in the demand for new homes and a host of other consumer products targeted at specific age groups. The post-war babies are now young adults with their own families. Since 1970, the number of new Montana households has grown by approximately 56,000, a 26 percent increase. National increases were more on the order of 20 percent. The aggregate economic and social impact of age structure changes has been significant. In addition to an increased demand for new homes, a host of other consumer products have been targeted at specific age groups (recreational forms and facilities, quick-food restaurants, clothing styles, etc.). The effects extend from the expansion of credit to school enrollment cycles as well as to the composition and growth of the labor force mentioned earlier.

-- Rising crime rates related to a short-term swell in the number of young individuals who are more prone to commit crime.

Future impacts will include:

-- Declining college enrollment.

-- Slower economic exansion but lower inflation and unemployment resulting from slower labor force growth.

-- Mounting costs of retirement and health care programs as the population becomes older.

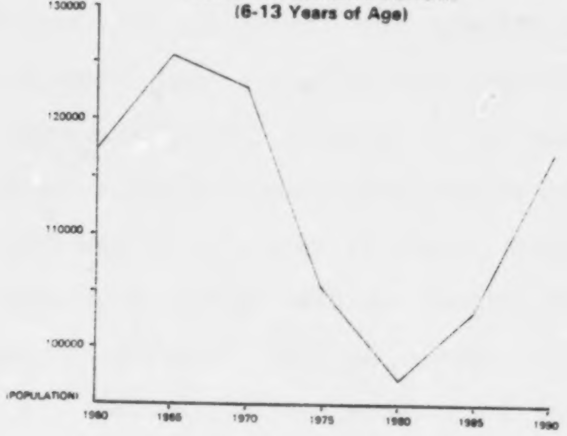
-- Falling crime rates as the relative number of young people declines.

2.9 PER CAPITA INCOME

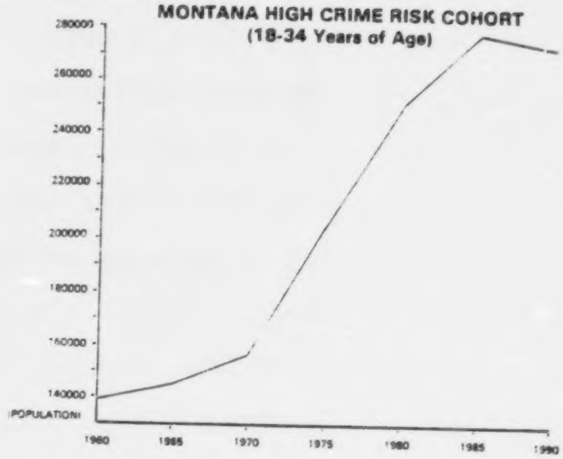
Table 2.18 provides per capita income and personal income per employee for the local economy and for Montana. Flathead County's per capita income is slightly above the state norm while Lake County's per capita level is approximately 27 percent below the Montana average.

FIGURE 2.7

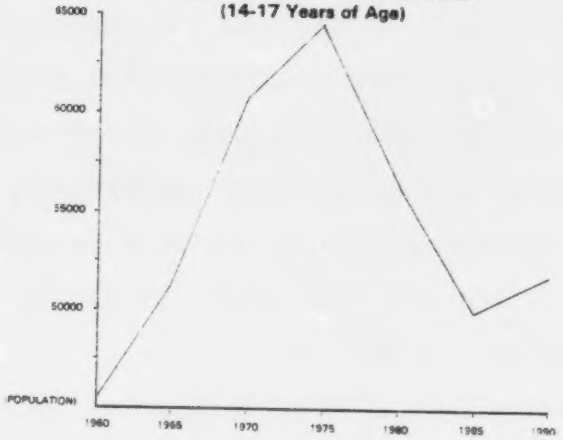
DEMOGRAPHIC PATTERNS



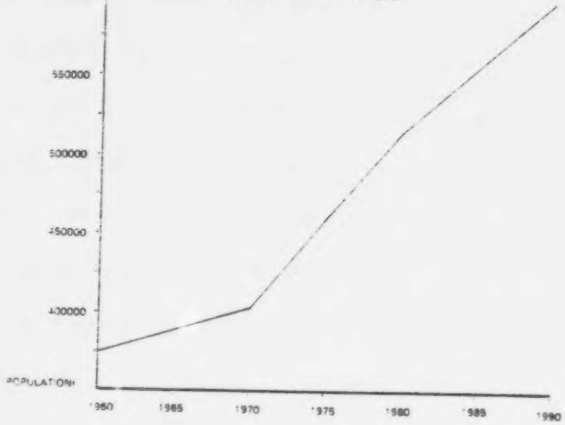
MONTANA SCHOOL COHORT
(6-13 Years of Age)



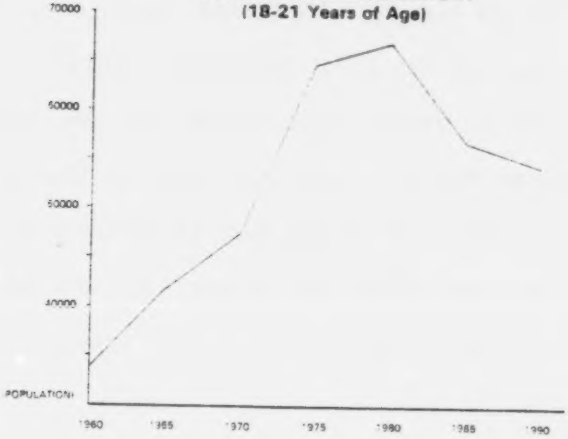
MONTANA HIGH CRIME RISK COHORT
(18-34 Years of Age)



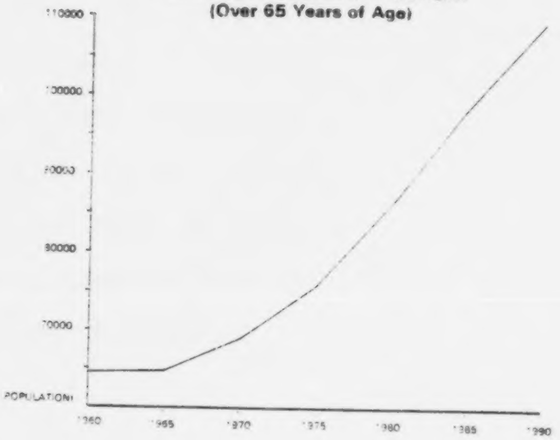
MONTANA HIGH SCHOOL COHORT
(14-17 Years of Age)



MONTANA LABOR FORCE COHORT
(16-64 Years of Age)



MONTANA COLLEGE COHORT
(18-21 Years of Age)



MONTANA RETIREMENT COHORT
(Over 65 Years of Age)

Source: Demographics and Public Planning, Governor's Office, 1979.

Lake County's relatively low income is the result of several influences. First, and probably most significant, Lake County's population is 17 percent Native American. No current Native American income data are available, however, it is safe to assume that income is very low on the Flathead Reservation. The 1970 Bureau of the Census data indicate that the median family income on the reservation was 41 percent lower than the comparable state figure. If this same difference is still present, about 7 points of the 27 point difference in per capita income can be explained by lower Native American income. Lake County also has a slight concentration in lower paying industries (see income concentration index) and fewer people working relative to the population base. The employment/population rate is also 13 percent lower than the state average. Fewer people working results in lower per capita income.

The per capita income levels in both counties would be higher in the absence of employment seasonality. For example, the seasonality index for Flathead County is 13.5 percent. This index implies a 13.5 percent variation in employment from the highest employment month to the lowest month. Seasonal variation due to industry mix at the state level is nine percent. The industrial mix (a concentration in wood products and tourism) adds approximately two points to Flathead's average unemployment rate. If unemployment

TABLE 2.18

PER CAPITA INCOME
(Five Year Average: 1975-1979 Unless Specified)

	Flathead	Lake	Montana	Percent of State Flathead	Percent of State Lake
Per Capita Income (1)	$ 6,406	$ 4,596	$ 6,318	101.4%	72.7%
Personal Income per Employee (1)	$15,141	$13,647	$14,127	107.2%	96.6%
Unemployment Rate (2)	8.6%	7.0%	6.0%	143.3%	1.17%
1980 Employment/Population Rate (3)	40.6%	38.8%	44.7%	90.8%	86.8%
1975 Seasonality Index (4)	13.5%	9.3%	9.0%	150.0%	103.2%
1978 Income Concentration Index (4)	104.0%	95.8%	100.0%	104.0%	95.8%

Sources: 1 U.S. Bureau of Economic Analysis, Regional Economic Information System

2 Montana Department of Labor and Industry, Montana Employment and Labor Force, February 1981.

3 U.S. Bureau of the Census, 1980 Census, Final Population & Housing Unit Counts.

4 See derivation below:

Calculation of Seasonality Index = $\sum_{j=1}^{23} X_j E_{ij}/E_j$

Where X_j = seasonal index for industry$_j$
E_{ij} = employment in industry$_j$, county$_i$
and E_j = employment in industry$_j$, state

X_j was derived using monthly state data (790 Employment Series) from 1960-75 and was calculated for each industry as follows:

$$X_j = \frac{\text{High-Low Employment Month}}{\text{Average Employment}}$$

Earnings Index =

$$\sum \frac{\text{Earnings per worker industry}_j \text{ Montana}}{\text{Average earnings per worker (Montana)}} \times \text{percent of total employment industry}_j \text{ (County}_i\text{)}$$

were lower, Flathead's per capita income level would exceed the state average by more than the current one percent. It is, however, important to realize that Montana's per capita income area is below the national norm. Since 1970 Montana per capita income levels have averaged 12 percentage points below the U.S. base.

One of the more frequently asked questions concerning Montana's economy is: Why is per capita income 12 percent lower than the national norm? There are no definitive explanations, but several possibilities exist.

--Employment in nearly all Montana industries is more seasonal than their national counterparts. Montana's employment base also is concentrated in industries which are more seasonal than their national counterparts. In other words, many individuals may not work year around in Montana, thus reducing the per capita income level. This effect may account for roughly seven percentage points of the income gap.

--One commonly advanced explanation for Montana's lower per capita income level is that the state's economy has a larger than normal concentration of low paying industries. This does not appear to be true; in fact, most Montana hourly wage rates are somewhat above the national norm. And, since average weekly hours worked per employed person are comparable to the national level, the seasonality hypothesis again is confirmed. In other words, since Montana wages are slightly higher than the national level and work weeks (hours) are similar, a substantive part of the work force must not be employed year-round.

--Another factor which may contribute to Montana's lower per capita income is the state's population growth. With income rising at the national rate and population growing faster than the national average, changes in per capita levels in Montana will be less than the national increase. In addition, estimation error in population during the 1970s would account for about 1.4 points of the discrepancy between Montana and national per capital/income levels. In other words, Montana per capita income levels were underestimated by approximately one percent during this period.

-- The cost of living may be lower in Montana than nation wide. Although no state-specific income adjustments exist, regional deflators suggests that prices are slightly lower in the western region of the country. If this is true, the "real" difference between Montana and the nation is less than 12 percent.

--The costs of crime, pollution, congestion, and commuter travel appear to be lower in Montana. Also, nearly all Montanans live within areas which other Americans are willing to spend literally days and hundreds of dollars to visit. Even though these sorts of influences are not accounted for in standard income estimates or cost of living indices, there is a direct and substantial effect on the well being of Montana residents.

2.10 INCOME GROWTH

Income growth in the Flathead Region has exceeded the growth experienced at either the state or national levels for the period of 1968-1978. Flathead County growth rates were greater than those of Lake, not surprisingly, since employment in Flathead County grew more rapidly. Table 2.19 presents income growth rates for 1968-1978 in both real and nominal terms. The nominal growth rates are not price adjusted whereas real growth reflects the impact of inflation on actual income.

In terms of the long-run trend, much of the absolute increase in income, both in Montana and nationally, has been the result of inflation. For example, Montana's per capita income increased 230 percent between 1960 and 1978, while the real growth in purchasing power (per capita) grew by a more modest amount, 49 percent. And, in Montana, real per capita income has actually declined marginally since 1973, the state's best agricultural year. Inflation and the impacts of the recession likely will result in a decline in real income for Montanans for the next year also.

Much of the historical upward drift in prices has been the result of factors mentioned previously: slower productivity gains in nonbasic activity and rapid labor force expansion. Throughout the 1970s nominal increases in income through expanded employment often have outpaced real output levels, resulting in higher prices and declining purchasing power. Assuming that federal fiscal and monetary actions become more conservative and that the national declines in investment reverse, inflation should slow in the 1980s as the effects of the "baby boom" play out.

Table 2.20 illustrates the relative importance of each industry in Flathead and Lake County and how much of the overall growth was associated with each industry. For example, in 1978 manufacturing accounted for 29 percent of all wage and salary income in Flathead County. Over the period of 1968 to 1978 manufacturing increases accounted for 27 percent of all income growth.

TABLE 2.19
INCOME GROWTH
Percent Change 1968-78

	Nominal Growth		Real Growth*	
	Personal Income	Per Capita Income	Personal Income	Per Capita Income
Flathead County	204%	139%	62%	27%
Lake County	190%	130%	55%	22%
Montana	175%	147%	47%	32%
United States	153%	131%	35%	23%

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System.

U.S. Bureau of Labor Statistics, Monthly Labor Review, February 1981.

*Note: Data are adjusted to reflect average prices indicated by the consumer price index; 1968 = 104.2; 1978 = 195.3.

TABLE 2.20
SOURCE OF INCOME GROWTH

	Flathead		Lake	
	Percent of Total Income 1978	Percent of Total Change 1968-78	Percent of Total Income 1978	Percent of Total Change 1968-78
Farm	2.0%	1.4%	5.8%	-4.7%
Farm Services	0.3%	0.3%	0.7%	0.8%
Mining	0.1%	0.0%	0.2%	0.3%
Construction	8.7%	10.1%	8.8%	11.3%
Manufacturing	29.2%	26.9%	14.7%	15.3%
Transportation and Utilities	11.0%	10.5%	3.0%	3.6%
Wholesale Trade	3.8%	4.3%	2.7%	3.4%
Retail Trade	12.6%	11.6%	13.6%	12.8%
Finance	3.8%	4.5%	5.1%	6.3%
Services	13.3%	14.9%	20.2%	25.3%
Government	15.1%	15.6%	25.2%	25.7%
Total	100.0%	100.0%	100.0%	100.0%

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System.

3 WOOD PRODUCTS

PERFORMANCE AND OUTLOOK

(A National and Local Perspective)

The purpose of the following chapters is to evaluate the long-term potential of the basic sectors within the Flathead Basin. These scenarios are later used to generate population and employment projections for the region. The present chapter also examines how national economic policies determine the future of the wood products industry in Montana and in the local area.

3.0 THE NATIONAL SETTING

The wood products industry represents the single largest economic force in the Basin. Much of the growth of the local economy has been directly associated with the expansion of this key sector. The past two years, however, have been a difficult period for the lumber business. High levels of inflation and interest rates have pushed the cost of owning a home beyond the grasp of many Americans. And, no new home construction translates into bad times for western Montana.

The new policy of the Federal Reserve Bank to allow "market determined" mortgage rates has placed a significant and not totally justified burden on the wood products industry. The effort to reduce inflation by reducing consumptive debt, a policy which is in the best interest of the nation, is without a doubt, not in the best interest of local mills--in the short-run!

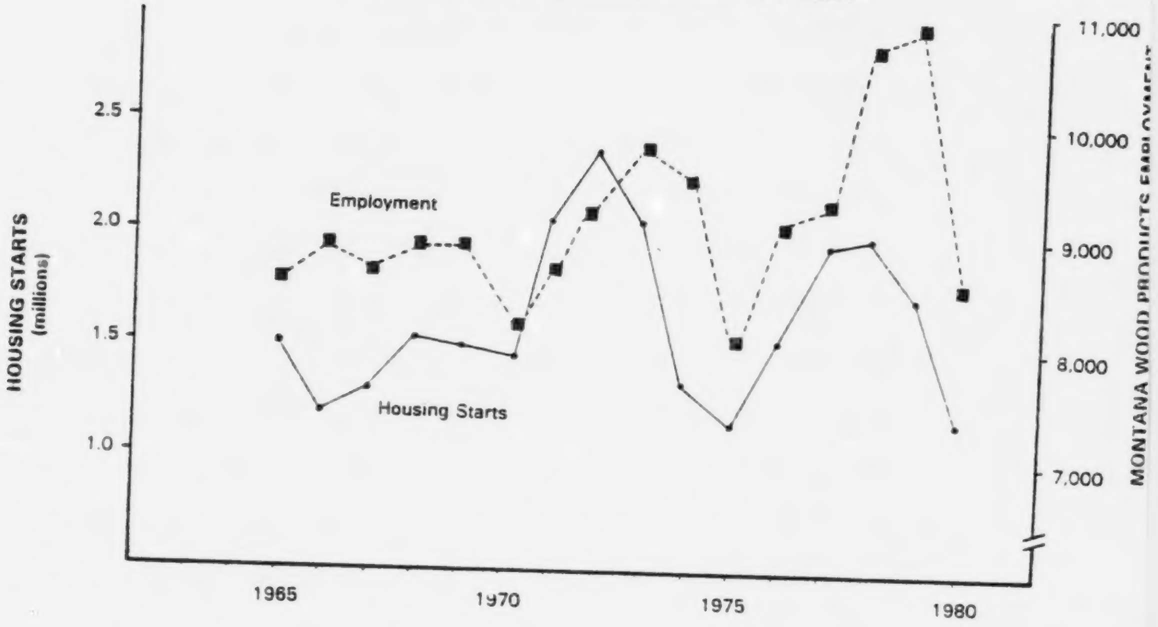
Manufacturing and construction payrolls are more adversely affected than those of other industries during a recession. Those states which have a high concentration in manufacturing, particularly durable goods, tend to be most sensitive to a downturn in national business activity. Since the Western states, including Montana, have relatively less manufacturing and more service and government employment, the local influence of a national recession usually is less. The notable exception to this tendency is found in those Montana counties which have the wood products industry as their economic base. These areas are significantly influenced by national construction activity, which sharply declines during a recession. The dramatic job loss in the wood products industry (Figure 3.1) between 1979 and 1980 can be traced directly to national events and national economic policy. The main difference, then, between Montana and the more industrialized states is that recessionary impacts are limited to a handful of counties versus the whole state. Clearly, this pattern is of no comfort to local businesses and their employees.

In order to analyze how federal actions impact the housing market, it is first of all necessary to appreciate the impact of home mortgage rates on the cost of owning a home. Table 3.1 illustrates this dramatic impact. If a family were to purchase a home, say their first home, for $70,000, it would be necessary under conventional mortgage terms to make a downpayment of 20 percent, or $14,000 in the present example. These figures are not unrealistic in many areas of the United States. The mortgage would be $56,000 which is a considerable debt considering that family income is often less than $30,000 before taxes. As a rule of thumb, whenever home payments exceed 25 percent of family income, it becomes very difficult for families to purchase homes. In our example, this problem area occurs at a 13 percent mortgage rate or greater. Not surprisingly, for the past year or so, most homes have been sold on "contract" with lower than conventional rates to allow the seller to move houses. Because of high interest rates, new construction activity has fallen dramatically placing many local wood products workers on the unemployment line.

Back in the 1960s and early 1970s when inflation was comparatively low, in the three to five percent range, mortgage rates were considerably lower than the current level. Banks and savings and loan institutions must operate

FIGURE 3.1

NATIONAL HOUSING STARTS AND MONTANA WOOD PRODUCTS EMPLOYMENT



Sources: Montana Department of Labor and Industry, Montana Employment and Labor Force, Feb. 1981; Fiscal Year 1979 Annual Planning Information for Montana, Rural CEP Area, Balace-of-the-State, Billings SMSA, Great Falls SMSA, June 15, 1978, Appendix IV; and unpublished data.

U.S. Bureau of Economic Analysis, 1979 Business Statistics, 22nd Biennial Edition, Oct. 1980, and Survey of Current Business, Vol. 61, No. 11, November 1981.

TABLE 3.1

HYPOTHETICAL ANNUAL PAYMENTS
($56,000 Debt/$30,000 Income)

Mortgate Rate	Annual Payment (30 year term)	Percent of Family Income ($30,000 before taxes)
5%	$ 3,643	12.1%
7%	4,513	15.0%
9%	5,451	18.2%
11%	6,441	21.5%
13%	7,471	24.9%
15%	8,529	28.4%
17%	9,606	32.0%
19%	10,698	35.7%

Source: Derived from above stated assumptions.

at a profit, just like any other business. Lending institutions add their costs of doing business (plus a profit) to the inflation rate in order to determine the mortgage rate. The long-run rate that savings and loans or banks pay depositors must also exceed the inflation rate; i.e., the real interest rate is positive. If this were not true there would be no deposits. Many people, however, over the last decade chose to hold their wealth (savings) in forms other than savings deposits. It was "more profitable" to go into debt by buying a home since the value of the "house" was appreciating at a faster rate than the interest payment or the rate they would receive on a savings account. Savings fell, and mortgage rates increased. These factors contribute four to five points to the mortgage rate. For example, if the inflation rate were five percent, the mortgage rate would be in the eight to ten percent range. Prior to 1965, inflation rates were less than two percent and the cost of borrowing money was relatively low, often six percent or less. But, as inflation increased, mortgage rates also rose.

During this period savings and loans were also protected, to a degree, from bank competition. In effect, housing mortgage rates were subsidized. The present situation, however, is different since home mortgages rates are becomming more similar to business loan rates. Deregulation within the financial community has also contributed to higher home prices. Money market funds, another new event within the financial markets, makes saving money more worthwhile and borrowing far less attractive.

When one looks at the problems of the depressed housing market, it is necessary to consider several different points of view. These issues are fundamentally national in scope although the local impact has been clearly negative. The country's current economic woes appear to be the result of past sins; inflation/debt and falling productivity both related events; declining productivity and investment levels result in increasing prices. Inflation results in higher prices, lower housing starts and less local jobs in wood products. This tendency, shown in Figure 3.2, illustrates that inflation results in lower housing starts and hence fewer local jobs.

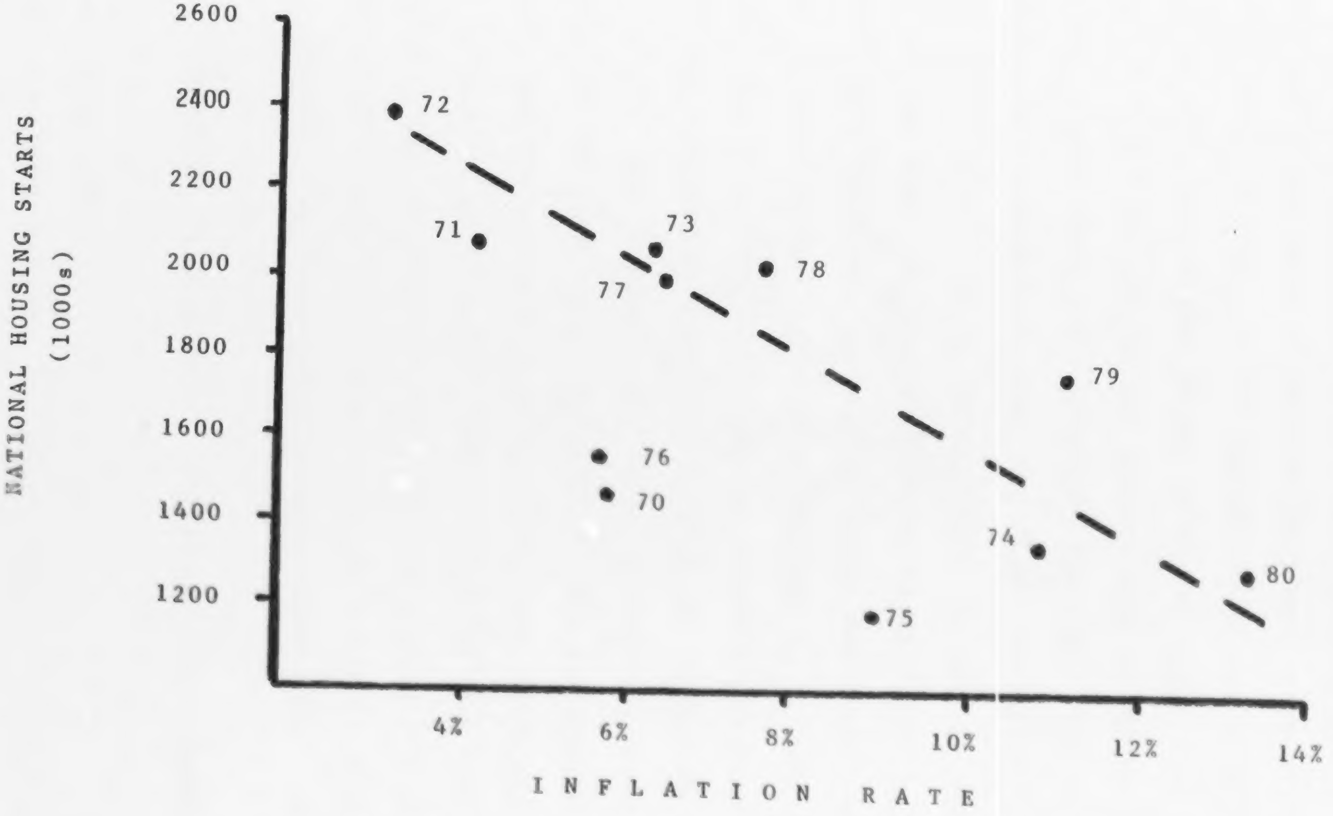
3.1 NATIONAL PRODUCTIVITY, INFLATION AND INTEREST RATES

Growth of American productivity was rapid, by historical standards, during most of the post World War II period. But in the last half of the 1960's the rate began to slacken. Until 1974, this slackening was not particularly disturbing from the standpoint of long-term growth. Beginning in 1974, the situation became disturbing and also puzzling. The productivity trend turned far more adverse, and the influences responsible for the slow-down prior to 1974 were no longer sufficient to explain the decline below the earlier trend. The major productivity series--output per person employed, output per hour, and output per unit--all showed much the same pattern of retardation.

The trend rate of productivity growth in other major industrial countries, also has been declining in recent years. This decline, however, started earlier and has lasted longer in the United States than in other industrial economies. During the first 20 years after the World War II, output per hour for all employees in the private nonfarm business sector rose at an average annual rate of just under 2½ percent. From 1965 to 1973 the increase was 1½ percent. Since 1973 the annual growth of productivity has been less

FIGURE 3.2

HOUSING STARTS AND INFLATION



Source: Developed from housing start and inflation data, U.S. Department of Commerce, Survey of Current Business.

than 1 percent. Much of the drop in productivity (and increases in inflation) is assocated with declines in investment and savings--which may have been the result of too much housing speculation. Funds for housing compete with funds for business investment and productivity growth.

Without increased business investment, productivity gains cannot be realized; without savings there can be no investment. Within the context of western industrialized nations, people in the United States spend far more and save far less than our international neighbors who, not just by coincidence have higher productivity growth. Table 3.2 and Figure 3.2 reveal this propensity for us to emphasize the present over the future.

Variations in growth rates are strongly related to national savings and hence investment as can be seen from Figure 3.3. About 50 percent of the growth rate variation is explained by savings, the rest is related to such other variables as the income distribution and employment mix of the respective countries.

The issue of capital formation in the United States is nothing less than critical. As mentioned earlier, short-term variations in productivity determine our current inflation problem to a large degree. Conversely, to an equal degree our real savings rate explains a large part of our productivity problems. Personal per capita savings of $330 per year (1979) is too low to allow for needed investment.

TABLE 3.2

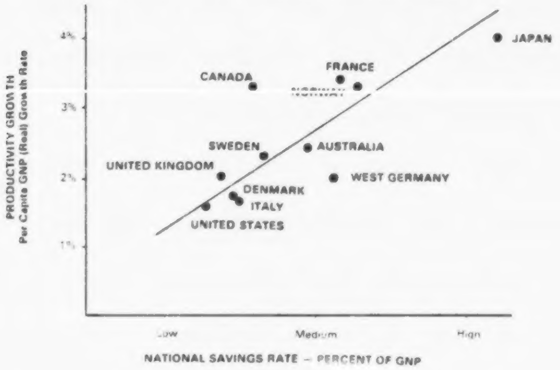
SAVINGS AS A PERCENT OF TOTAL DISPOSABLE INCOME*
1978

United States	4.9%
France	17.2%
West Germany	13.7%
Italy	23.1%
Netherlands	12.9%
United Kingdom	14.4%
Japan	21.2%
Canada	10.4%

Source: United Nations Databook, 1979.

FIGURE 3.3

PRODUCTIVITY GROWTH
Per Capita GNP (Real) Growth Rate



Source: World Bank, World Bank Databook, 1978.

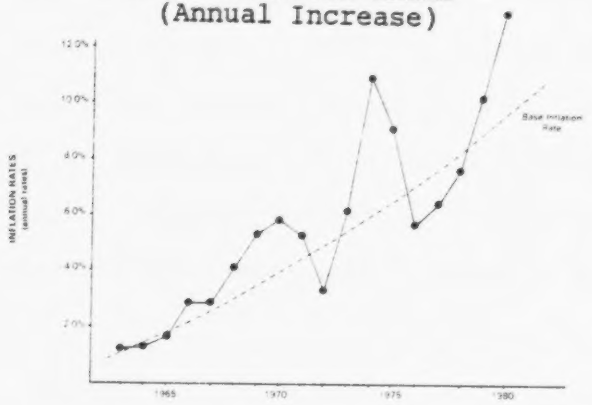
*Note: disposable income is defined as income after taxes.

INFLATION AND INSTABILITY

The mid-1960s, a period of rapid growth with stable prices, provided a kind of economic euphoria. Many economists began to minimize the perils of economic fluctuations, inflation, or stagnation. More recent experience has demonstrated, however, that we cannot take for granted our freedom from business cycles. The burdens of rapidly rising prices, of unemployment, and of slow recovery from a recession are now more freshly and painfully appreciated.

Everyone now feels the increasing burden of inflation. Of the total price increases since 1929, two-thirds of the change has occurred since 1970. Beginning with 1929, it took 40 years for prices to double, the next doubling took slightly over 10 years and, if the present trend continues, prices will double again in the next 7 years. Inflation rates since the early 1960s are shown in Figure 3.4.

FIGURE 3.4
U.S. INFLATION RATES
(Annual Increase)



Source: U.S. Department of Commerce, Survey of Current Business.

Economists, and practically everyone else, debate the "livability" of inflation, its overall consequence, and its effect on particular groups. People also hold divergent views on the proposition that inflation is like an epidemic disease, which must be stopped, or else it will expand, grow more severe, and overwhelm everything.

Inflation which represents an increase in prices on the average places a burden on those who cannot prepare for it--and preparing for it is at best quite difficult. People with relatively fixed incomes suffer from a loss in purchasing power when prices rise. That includes people on annually determined salaries which change slowly. It also includes older people living on pensions or annuity incomes which do not change at all when prices rise.

Creditors also suffer--people who have loaned out money, for example, by purchasing private or government bonds or putting money in a savings account (a loan to the bank). Why? Because a loan paid back with dollars with lower purchasing power for real goods and services represents a loss in wealth. Think, for example, about someone who bought a ten-year Series E federal savings bond in 1960 and held it to maturity. He found in 1970 that the purchasing power of the principal he had loaned to the government had fallen 29.8 percent. That is the amount by which the Consumer Price Index, or cost-of-living index, rose from

1960 to 1970. The loss would have been much greater during the 1970-1980 period.

On the other hand, debtors and people whose incomes increase fairly quickly as prices change benefit from inflation. Debtors pay back the mortgage loan on their houses with dollars which have substantially less purchasing power than the dollars loaned ten years ago; people who own businesses that can adjust prices quickly can maintain or better their position as their profits rise along with prices.

The inflationary psychology of "buy now, it will cost more next year" simply fuels the engine of inflation, driving it faster and faster each succeeding period. Going into debt to buy at today's prices has become an increasingly popular method for both the public and private sector to maintain or increase living (or expenditure) standards in the face of inflation. Average gross weekly real earnings per worker are the same today (1979 - $94.85) as they were in 1962. Since 1962, however, consumer and federal real debt has increased approximately 80 percent. The lion's share of this new debt resulted from consumer expenditures ...credit and home mortgages. Federal real debt increased 19 percent over this period while consumer debt increased 124 percent. Business debt (stocks, bonds, and loans) is not included in this comparison because such debt is investment rather than consumption oriented. Although state and local government debt is expanding rapidly, government is no more inflationary than consumer debt related to buying new cars and houses. Federal debt, as a percent of real GNP, has been relatively stable since 1970 and is substantially less now than in the previous decades. It has actually fallen from 58 percent of GNP in 1960 to 35 percent today (1979). That is not to say that the federal government does not contribute to inflation by deficit spending. Within the last twenty years only one federal budget was balanced. But, relative to consumer debt, the inflationary impact is probably much less. Government contributes to inflation in more subtle ways; through regulations, requirements, trade restrictions, price supports, and money supply manipulation.

The Board of Governors of the Federal Reserve Banking System typically has increased the nation's supply of money much faster than the real output of goods and services. For example, between 1965 and 1979, average yearly money supply growth was 5.7 percent, while yearly real GNP growth averaged only 3.4 percent. Increasing money growth faster than real output logically adds to prices--more money with a fixed amount of product drives up prices. The relationship between money supply growth and inflation is shown in Figure 3.5. Figure 3.6 shows how debt and inflation are related--the other side of the coin, since money supply growth allows debt to occur. In this instance, debt includes net federal

FIGURE 3.5

INFLATION AND THE MONEY SUPPLY

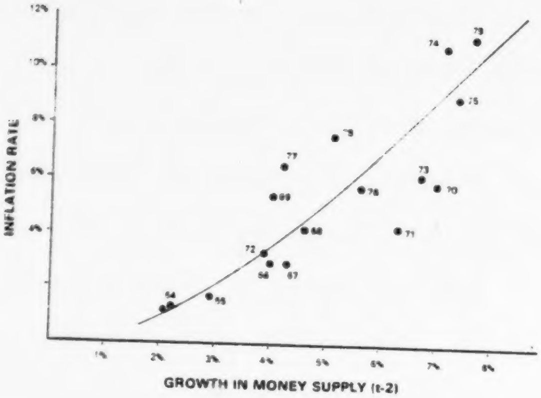
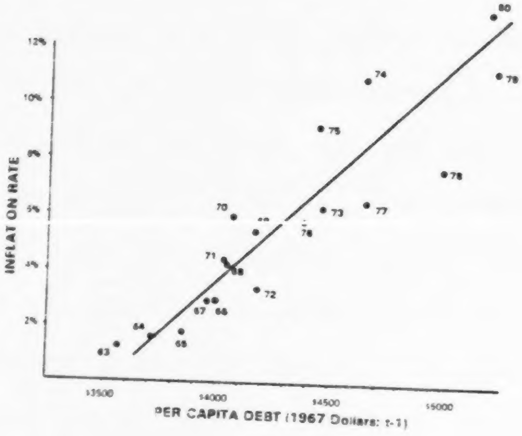


FIGURE 3.6

INFLATION AND DEBT



Source: U.S. Department of Commerce, Survey of Current Business.

Note: t-2 and t-1 indicate changes in variables 2 and 1 year earlier, i.e., a change in the money supply will not affect inflation until 2 years after the change has occurred. In other words, there is a lag in the response.

and consumer borrowing, i.e., home mortgages, automobile loans, credit cards, and other forms of installment buying.

Accelerated growth in the money supply theoretically helps to keep interest rates down. And, low interest rates allow borrowing to occur at a faster pace than high interest rates would permit. This results in a very important dilemma; a policy trade-off of heroic proportion:

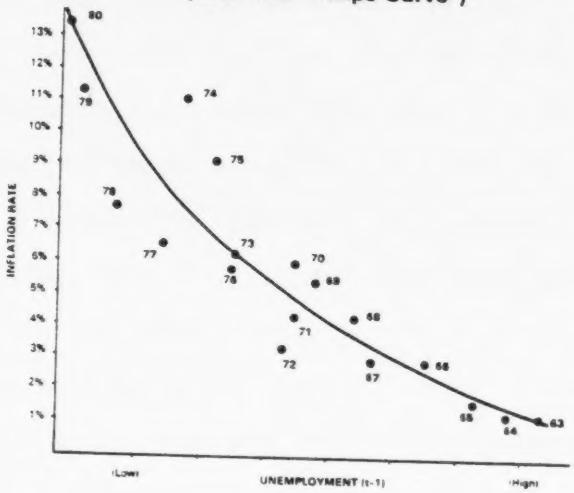
- Should the Federal Reserve bank allow money supply growth to accelerate...stimulate debt and consumption, adding jobs to the economy, but fueling inflation?
- Or, should money supply growth be restrained...driving up interest rates...reducing borrowing and consumption, putting people out of work, but slowing inflation?

This trade-off between inflation and unemployment is shown in Figure 3.7. The unemployment rate in this case has been adjusted for productivity growth (output per worker) and changes in average hours worked. The relationship suggests that as more workers are employed (low unemployment), prices tend to increase faster than when few workers are employed (high unemployment). This means that when more people are working, and hence spending, prices go up.

If growth in the money supply is restrained, some additional unemployment may result. For example, in 1979 the money supply growth rate was only 3.9 percent, much lower than the previous year's rate of 7.8 percent. This

FIGURE 3.7

INFLATION AND UNEMPLOYMENT
(Modified Phillips Curve*)



*NOTE. Uses population rather than labor force base and adjusts employment for changes in productivity and average hours worked as opposed to normal definition of unemployment.

Source: Economic Conditions in Montana - 1980,
Office of the Governor, Helena, Montana.

reduction resulted in much higher inflation and interest rates in 1979 and 1980, adding considerable cost to buying a new house (up about 25 percent on a monthly basis) resulting in a sharp drop in construction, in the demand for wood products, and eventually causing a major drop in wood products employment in western Montana. If money growth is accelerated, we all pay an inflationary premium, betting that we will reap the benefits of a short-term employment gain. Usually, it doesn't work this way; prices go up with no other effect.

Many economists, often called monetarists, suggest that the boom and bust cycles of business may be smoothed out by more responsible monetary policies, i.e., not letting the money supply grow faster than real output. This is a bitter pill to swallow at times (particularly for national politicians), since slower money growth means less debt, and less consumption and job growth in the short-run. Inflation, on the other hand, seriously erodes family income. The trade-offs are quite real. We, as a society have adopted short-run policies for long-run problems. Society is now paying the price of those past errors.

LOCAL IMPORTANCE

What does this really mean for the local economy? In all probability, mortgage rates will remain high by past standards. Conversely, construction and wood products demand will remain low--resulting in several years of "hard times" for the wood products sector. *As inflation improves, mortgage rates will also decline and jobs in wood products will increase.*

Economics has often been labled the "dismal science." The future is full of uncertainty--no one really really knows what the next 20 years will bring. We can only look at general patterns and rely on "best-guesses." To develop this best guess scenario, it is important to first investigate the outlook for wood products within Montana.

3.2 WOOD PRODUCTS -- THE STATE PERSPECTIVE

After World War II, the tremendous increase in construction activity insured a continued demand for Montana wood products. This postwar increase also was related to declining timber supplies in other parts of the nation. Producers began to view Montana's resources, which to this point had not been fully utilized, with more interest. Increasing prices and improved technology in terms of harvesting steep slopes gave rise to numerous small mills during this period. This postwar boom, however, was relatively short-lived. As the result of rising interest rates, mortgage constraints, and the falling demand for mine timbers, the industry experienced a sharp reduction in output and employment. But within a few years, the industry regained stability and became more diversified by producing pulp, paper, particleboard and other products.

As prices for lumber products continued to rise, a strong market developed for residuals from the existing industry. These technological innovations not only expanded employment but also improved the efficiency of the entire system. Many of these new products were produced using by-products of other firms which were previously burned or disposed of by other means. Other advantages included less seasonal fluctuation in employment and another income source (sale of chips to the mills).

Increasing national demand for plywood because of a shortage of logs for plywood in other areas also helped Montana's industry grow. Mills were increasingly modernized and new products were added, such as laminating, paneling, finger-jointing, pressed logs, and studs, all products which can be made from smaller trees. Many of these new technologies and products were the result of or in reaction to rising prices, increasing shortages, and growing demand--of course, all related.

OUTPUT AND EMPLOYMENT

Table 3.3 presents employment and production data since 1960 for wood products. Industry employment climbed to over

TABLE 3.3

MONTANA LUMBER EMPLOYMENT AND OUTPUT

	Employment	Output (Millions of Board Ft)
1960	7300	1035
1961	7400	1152
1962	8000	1259
1963	8500	1166
1964	8400	1271
1965	8600	1311
1966	8900	1375
1967	8700	1347
1968	8900	1499
1969	8900	1397
1970	8200	1281
1971	8700	1397
1972	9200	1311
1973	9800	1445
1974	9500	1165
1975	8100	1038
1976	9100	1197
1977	9800	1250
1978	10700	1256
1979	11100	1257
1980	8800	983

Note: The production figure is measured in millions of board feet of cut timber and does not include processed materials.

Source: Western Wood Products Association, 1980 Statistical Yearbook of the Western Lumber Industry, and previous years.

Montana Department of Labor and Industry, Montana Employment and Labor Force, Feb. 1981; Fiscal Year 1979 Annual Planning Information For Montana, Rural CEP Area, Balane-of-the-State, Billings SMSA, Great Falls SMSA, June 15, 1978, Appendix IV; and unpublished data.

11,000 persons in 1979, a banner year. However, as interest rates climbed during the later half of 1979 and in early 1980, the demand for new housing fell sharply and employment correspondingly declined. As a result, the 1980 level was down about 2000 jobs when compared to 1979. Hopefully, the losses are for the most part temporary, with the exception of the Evans plant in Missoula which employed about 200 workers and closed. Other "housing cycles" are revealed in the data, e.g., the last cycle peaked in 1973 and bottomed-out in 1975. Fortunately, Montana's market is largely in the West and Midwest which generally is not as affected by recessions as the more industrialized sections of the country. The data suggest other conclusions as well.

First, because of increases in the efficiency in utilizing wood residue previously discarded, employment has continued to grow while the actual harvest has declined slightly. There also has been a slight decline in production efficiency, when crudely measured as board feet cut per logger. Within the last fifteen years, this measure of output per worker has fallen by approximately 20 percent. This decline may reflect several related events. Specifically, there are fewer large trees, new areas of development are increasingly more costly to harvest (slope, accessibility, etc.), the mix of harvest between private and public lands has changed and so has Forest Service policy--which has grown increasingly more restrictive. A related issue, perhaps, is that lumber prices have been rising at nearly 20 percent per year for the past five years.

Second, although not shown in the table, there has been a marked shift in the composition of the harvest--the federal contribution (mostly Forest Service) declining and private forests picking up the difference. In 1970 and 1971, public timber amounted to approximately two-thirds of the harvest, the rest coming from private lands. However, within a few years the pattern of public and private harvest significantly changed, placing relatively less emphasis on public lands and more on private. The allowable cut on public land has been much higher than the actual cut since the early 1970s. This may have resulted from federal wilderness review or possibly other actions on the part of the Forest Service, which resulted in a more conservative cut. On the other hand, it may simply have been a matter of arithmetic--the way in which the allowable cut was calculated. Regardless of the cause, the effect was to shift the burden of harvest to private lands. Private (company) lands are generally well managed but small private individual holdings often are not.

3.3 WOOD PRODUCTS -- THE LOCAL AREA

Table 3.4 illustrates that the local (Flathead National Forest, Flathead Reservation, private and state cut in Flathead and Lake Counties) volume of timber dropped over the past decade. Using a three year average of the first and last three years of data in Table 3.4, the actual harvest fell by 20 percent. Employment, however, over the same period grew by 12 percent. For comparison, the statewide harvest fell 6 percent and employment increased 18 percent. The data also show that national forest output has declined by approximately one third. The Flathead Reservation and private harvest have also declined since the mid 1970s.

Table 3.5 reveals that employment has been slowly increasing, the result of more plywood and particleboard production. The 1973-74 period, however, was the high point of both output and employment. The 1975 recession resulted in the loss of several hundred jobs.

As mentioned earlier, most of the local production is shipped east to the north central (Iowa, Minnesota, Nebraska, North and South Dakota) region of the United States. Table 3.6 shows these shipment patterns. The fact that these receiving states are less influenced by business cycles than most areas, "may" help dampen recessionary blows to the local economy.

TABLE 3.4

TIMBER VOLUME FOR FLATHEAD AND LAKE COUNTIES*
(MMBF)

	Flathead National Forest	State	Reservation	Private	Total
1970	145.9	21.2	42.2	66.1	275.4
1971	149.1	15.9	53.5	79.4	297.9
1972	156.4	12.9	70.4	90.8	330.5
1973	118.4	14.2	76.9	69.2	278.7
1974	132.6	5.5	59.5	112.6	310.2
1975	114.6	5.9	44.7	114.6	279.8
1976	154.7	4.8	38.2	97.7	295.4
1977	121.5	10.3	39.3	98.4	269.5
1978	80.1	6.8	41.3	100.0	228.2
1979	96.0	17.2	29.7	85.4	228.3

Source: U.S. Forest Service, Flathead NFS Management Plan
Bureau of Indian Affairs, unpublished data
Montana Department of State Lands, unpublished data

*Note: Timber volume cut.

TABLE 3.5

WOOD PRODUCTS PRODUCTIVITY CHANGE (Lake & Flathead County)

	Cut Volume (MMBF)	Employment	Volume Per Person
1970	275	2104	130,703
1971	298	2185	136,384
1972	331	2364	140,017
1973	278	2706	102,735
1974	310	2572	120,529
1975	280	2468	113,452
1976	295	2454	120,212
1977	270	2350	114,894
1978	228	2516	90,620
1979	228	2531	90,083
1990	--	--	85,000 (trend value)
2000	--	--	73,000 (trend value)

Sources: U.S. Forest Service, Flathead NFS Management Plan
Bureau of Indian Affairs, unpublished data
Montana Department of State Lands, unpublished data
U.S. Department of Commerce, Regional Economic Information System.

TABLE 3.6

SHIPMENTS OF LUMBER AND PLYWOOD FROM MANUFACTURERS IN FLATHEAD, LAKE LINCOLN, AND MISSOULA COUNTIES, 1976

Market Area	Value of Lumber and Plywood (Thousands of Dollars)
Montana	$ 3,776
Rocky Mountain	$ 3,485
Far West	$ 1,743
North Central	$12,779
South	$ 2,614
Northeast	$ 1,452
Export	$ 871
Unknown	$ 2,323
Total	$29,043

Source: Bureau of Business and Economic Research, University of Montana, Montana Forest Industries Data Collection System.

3.4 WOOD PRODUCTS - PROJECTIONS

The author interviewed a variety of individuals directly involved with the lumber business. There was no consensus as to whether or not employment would increase or decrease. There was overall agreement that national forest output would not grow. Most individuals also expected that timber volumes on private and Indian land will decline. The total harvest is, therefore, expected to fall.

Even though 1980-81 has been a very difficult period for the industry, mortgage (and inflation) rates are coming down. If the present recession follows the normal pattern, housing starts and local jobs should soon begin to pickup. There are, however, more important long-term growth issues which will affect the future of the industry. Some of these growth considerations are discussed in the following paragraphs.

The wood products industry is accustomed to market uncertaintly. Changes in national demand and the resulting boom and bust cycles have been and will remain a fact of life. However, the long-term future of the industry is much more related to changes in the management of federal lands than to national demand. The U.S. Congress and Forest Service currently in the limelight, will be making decisions which will significantly affect timber practices. The Roadless Area Review and Evaluation Process (RARE II) and the 1976 National Forest Management Act (which would result in a harvest reduction) represent two major decision points.

RARE II and the Montana Wilderness Bill (SB-393) represent one of the most hotly debated topics in Montana in recent years. It is an emotionally charged issue with comments from both factions (pro-development and environmental) often making equal sense but being totally divergent. In addition to the problems associated with polar viewpoints, the issue is magnified by uncertainty due to poor information. The industry is arguing that excessive or poorly selected wilderness areas will result in future job losses. They are right, but the quesion is --how many jobs will be lost? Environmental concern for noncommodity values is also important. But the argument goes much deeper than simple wilderness and nonwilderness distinctions. There is a pressing need for good management of both public and private forest lands in the future. The RARE II process, apparently the result of a frustrated Congress and growing sentiment over the inability of the Forest Service to manage, merely helped to make the issue more visible.

The demand for housing should remain strong for the next decade. Specifically, demographic patterns--the large number of new young adults born in the 1950s--should help maintain a high level of new household formations. But, it is likely most of the employment increase will continue to be found in processed materials as opposed to actual logging or the milling of dimension lumber. Also, the use of forest residuals may become feasible within the next ten years, adding to employment.

There is a little dispute by industry experts that productivity on federal lands could be increased greatly through intensive forestry management--artifical planting, control of competing vegetation, fertilization, thining, and the breeding of new genetic strains. The U.S. Forest Service admits that the land under its management produces 50 percent less wood fiber per acre than industry-owned land and, with respect the best practice industry land, much less than 50 percent. Environmental considerations, however, do exist. Furthermore, rapid timber growth in the southern states may result in Montana losing its share of the national market.

Long-term monetary policy over the next decade is expected to reduce both inflation and interest rates. Inflation will also decline as a result of lower growth of the labor force and expected increases in productivity. More individuals in the future may be able to afford "homes" as was the case in the 1960s and 1970s.

LONG-TERM OUTLOOK: In view of these considerations, most projections for the wood products industry show few changes in the level of the timber harvest, i.e., it is expected to remain constant. Nevertheless, it is doubtful that the present rate of harvest on private lands can be maintained indefinitely; current rates of logging are well above historical averages. This means that in future years, there will be a greater reliance on public lands for timber supply.

Projections as to the harvest of timber are shown in Table 3.7 These scenarios assume-

- Federal RPA goals on national forest land;
- a 25 percent supply reduction on Indian land;
- a 33 percent supply increase on state land; and
- a 30 percent supply reduction on private land.

Employment projections are shown in Table 3.8 and were derived from the harvest forecasts found in Table 3.7, and the productivity projections outlined in Table 3.5. The medium outlook indicates an increase of 467 total jobs (both counties) by the year 2000; slightly over 20 jobs per year. The low scenario depicts no growth and the high scenario depicts a growth double the historical trend. The impacts of these scenarios on population are discussed later in this volume.

TABLE 3.7

TIMBER VOLUME ASSUMPTIONS
FLATHEAD AND LAKE COUNTIES
(Average Volume 1980-2000)

	1970-74 Five Year Average		1975-79 Five Year Average		HIGH* (RPA High)		MEDIUM* (RPA Average)		LOW* (RPA Low)	
	MMBF	Percent	MMBF	Percent	MMBF	Percent	MMBF	Percent	MHFF	Percent
Forest Service	140	47%	113	44%	120	46%	110	50%	98	54%
Bureau of Indian Affairs	60	20%	39	15%	46	18%	30	14%	26	14%
State of Montana	14	5%	9	4%	14	5%	12	5%	8	5%
Private	84	28%	99	38%	80	31%	69	31%	50	27%
	298	100%	260	100%	260	100%	221	100%	182	100%

Sources: Tables 3.4 and 3.5

Medium Assumptions
Federal: 110 Average of RPA high and low
Indian: 25% Reduction on Indian land
State: 33% Increase in state lands
Private: 30% reduction on private lands

Productivity (Volume per man)	
1979	89,117
1990	84,943
2000	72,958

* Note: The Forest Service no longer utilizes a range for RPA projections. Congress recently adopted the high figure as the official planning target. However, at the time of the present analysis a range of targets was still used.

TABLE 3.8

EMPLOYMENT PROJECTIONS
(Flathead and Lake Counties)

	1990	2000	Gain (1980-2000)
High	3063	3564	1002
Medium	2796	3029	467
Low	2529	2495	-67
Trend	2802	3026	464

1979 = 2531

Source: Derived

4 TOURISM AND TRAVEL

4.0 STATE OVERVIEW

The importance of travel and tourism to Montana's economy has long been a controversial issue. The lack of up-to-date statistics concerning income and employment attributable to travel and tourism has added to the confusion. For example, statewide employment estimates, from a variety of sources, indicate that anywhere from 8,500 to over 30,000 Montanans have jobs which are part of the state's travel and tourism industry. Trying to assess the industry's economic impact from such imprecise statistics is indeed confusing. However, a recent study has made possible more reliable estimates concerning the industry, and the statistics presented here are the best currently available.*

The uncertainty concerning the economic impact of travel and tourism in Montana and in other states within the Old West Region (Nebraska, North Dakota, South Dakota, and Wyoming along with Montana) led to the 1979-80 Nonresident Travel, Tourism, and Recreation Survey (funded by the Old West Regional Commission), which allows a more meaningful and accurate definition of travel and tourism. This analysis utilizes that survey base, Montana road use data, and information from the 1977 Census of Transportation and the U.S. Travel Data Center to arrive at an estimate of the overall importance of the industry to Montana.

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*Abridged from: Bruce Finnie, Travel and Tourism in Montana, Montana Business Quarterly, Bureau of Business and Economic Research, University of Montana, Winter 1980.

In evaluating the economic impact of travel and tourism on Montana, the major concern is with out-of-state travelers and tourists. Their spending represents new money to the state just as does the sale of a carload of Montana cattle or lumber to out-of-state purchasers. But although employment and earnings data are regularly gathered for industries such as agriculture and wood products, the economic influence of the nonresident travel and tourism sector is difficult to determine. Employment and earnings data are gathered by type of economic activity and not by the type of customer served. For example, a restaurant serves both in-state and out-of-state residents who may or may not be travelers or tourists. It is difficult, if not impossible, to identify which portion of the employment and earnings generated by such a firm is attributable to each of these segments.

Although attention often is centered on tourism, it is part of the larger travel industry, which also includes business-related trips and the activity generated by those people passing through the state to other destinations. Business trips and cross-state travelers do not constitute tourism in the strictest sense, but they do generate income and employment. Furthermore, it is difficult to assess the nature of travel expenditures for Montana residents. Since no state level data are available, it becomes necessary to make certain assumptions concerning what proportion of Montanans' travel expenditure are recreational as opposed to travel for commuting, shopping, etc. As a result, some measure of estimation must be employed.

ECONOMIC IMPACT OF TRAVEL AND TOURISM

The information made available by the 1979-80 Nonresident Travel, Tourism, and Recreation Survey shows that in 1979 approximately 3.5 million nonresident visitors came to Montana. They spent nearly $500 million. Resident travel expenditures in 1979 generated another $400 million. Combining the resident and nonresident components, travelers and tourists spent almost $1 billion in Montana. That spending supported about 20,000 jobs and led to $172 million in earnings for Montana workers (Table 4.1). These figures were equal to about 4 percent of total earnings in 1979.

The travel industry is comprised of a variety of economic sectors including transportation; retail trade firms such as gasoline service stations and eating and drinking establishments; service industries such as hotels and motels and auto repair; and various recreation activities. The travel industry, as noted above, is larger than the tourism industry since it includes all forms of travel. Tourism, more narrowly defined, consists of travel primarily for pleasure and is estimated to account for approximately 40 percent of the total travel industry. Tourism, both resident and nonresident, provided in 1979 over 8,000 full and part-time jobs and about $71 million in earnings (Table 4.1). Unless otherwise noted, this discussion will refer to the entire travel industry.

Table 4.2 provides an indication of the overall economic significance of nonresident travel and tourism

TABLE 4.1

TRAVEL AND TOURISM EMPLOYMENT AND EARNINGS
MONTANA 1979

	----Employment----		-----Earnings*------ (Millions of Dollars)	
	Travel**	Tourism	Travel**	Tourism
Resident	10,143	3,043	$ 85.9	$25.8
Nonresident	10,185	5,334	86.2	45.1
Total	20,328	8,377	$172.1	$70.9
FTE adjusted***	16,771	6,911		

Source: Bruce Finnie, "Travel and Tourism in Montana" Montana Business Quarterly, Vol. 18, No. 4, Winter 1980.

* Includes wages and salaries, other labor income, and the income of self-employed persons.

** The travel industry includes the tourism segment (trips made for pleasure) and travel due to business, transit to out-of-state destinations, commuting, and other nonpleasure trips.

*** FTE - Full Time Equivalent. Assumes a thirty-three hour work week in the travel and tourism industry, which is the average of retail trade and services.

TABLE 4.2

EMPLOYMENT AND EARNINGS IN SELECTED INDUSTRIES MONTANA, 1979

Sector	----Employment------ Thousands of Workers	Percentage of Total	------Earnings------- Millions of Dollars	Percentage of Total
Basic industries, total	101.5	28.9	1,602.0	36.1
Agriculture	32.2	9.2	246.7	5.6
Mining	7.6	2.2	200.1	4.5
Heavy construction	3.9	1.1	94.6	2.1
Wood products	10.9	3.1	196.4	4.4
Other manufacturing	16.0	4.6	292.3	6.6
Railroads	7.4	2.1	168.6	3.8
Federal Government	13.3	3.8	316.8	7.1
Nonresidents travel	10.2	2.9	86.2	1.9
Tourism	5.3	1.5	45.1	1.0
Other travel	4.9	1.4	41.1	0.9
Derivative industries, total	249.5	71.1	2,837.0	63.9
Retail, trade and services, except travel	114.1	32.5	1,355.7	30.5
Resident travel	10.1	2.9	85.9	1.9
Tourism	3.0	0.9	25.8	0.6
Other travel	7.1	2.0	60.1	1.4
Construction, except heavy	11.4	3.2	261.5	5.9
State and local government	56.8	16.2	605.5	13.6
All other industries	57.1	16.3	528.6	11.9
Total	351.0	100.0	4,439.0	100.0

Sources: U.S. Bureau of Economic Analysis, Regional Economic Information System.

Montana Department of Labor and Industry, Bruce Finnie, "Travel and Tourism in Montana," Helena, Montana.

Montana Employment and Labor Force, Feb. 1981.

Note: Detail may not add to totals due to rounding.

relative to other economic sectors within Montana. Nonresident travel accounts for about 3 percent of total employment and approximately 2 percent of total earnings in Montana. Among the industries which constitute the state's economic base--the basic or export industries--nonresident travel is responsible for 10.0 percent of employment and 5.4 percent of earnings. In each case, tourism alone provides more than half of the the total nonresident travel contribution.

A further comparison indicates that although businesses serving nonresident travelers provide more jobs than mining and railroads and about the same number as wood products, total earnings of workers serving travelers and tourists are the smallest of workers in any basic industry.

CHARACTERISTICS OF THE NONRESIDENT TRAVELER

As indicated earlier, approximately 3.5 million visitors in total came to Montana in 1979, down somewhat from previous years. Unfortunately, lack of data on travel by bus, rail, and air makes it difficult to measure accurately changes in nonautomobile traffic. Estimates of the number of bus, rail, and air travelers were made for 1979, and one can assume that these were the same in 1977 and 1978.

TABLE 4.3

CHARACTERISTICS OF NONRESIDENT VISITORS TO MONTANA* 1977-1979

Mode of Transportation	1977	1978	1979	Percentage change 1977-1979
Number of visitors	4,194,569	3,909,577	3,474,106	-17.2
Automobile	3,697,421	3,412,429	2,994,752	-10.0
Bus	109,608**	109,608**	109,608**	0.0
Rail	71,175**	71,175**	53,381	-25.0
Air	316,365**	316,365**	316,365**	0.0
Visitor days	20,008,094	18,648,682	16,571,486	-17.2
Expenditures***	$586,800,000	$546,500,000	$485,700,000	-17.2

Source: Bruce Finnie, Montana Business Quarterly, Winter 1980, "Travel and Tourism in Montana."

* Includes all types of visitors: tourists (those traveling primarily for pleasure), business travelers, and those traveling through Montana to reach an out-of-state destination.

** Assumed constant.

*** Not adjusted for inflation.

If the automobile count data are correct, and they likely are correct, the number of nonresident visitors declined about 17 percent between 1977 and 1979, the latter being the year of the gas shortage. Although traffic data at the external (border) counters indicate very little change in overall activity, the percentage of nonresidents compared to total traffic has been falling since 1977. In that year about 29 percent of all travelers were nonresident while in 1979 the figure had declined to 24 percent of the total traffic (excluding commercial trucking and buses) at the border stations. The estimates of nonresident visitors and visitor days are shown in Table 4.3

Estimates of visitor days were based on an average length of stay of 4.77 days and total expenditures were determined based on an average expenditure of $67.70 per day per respondent. Other pertinent data from the recent Old West Regional Commission survey of nonresidents in Montana are provided in Tables 4.4, 4.5 and 4.6.

CHARACTERISTICS OF TOURISM EMPLOYMENT

Travel and tourism employment in Montana is concentrated in the retail trade and service sectors, particularly in hotels and motels. These jobs are predominately held by women (64 percent), tend to be low paying (1979 average wage of $4.70 per hour) and are often part-time. Although no occupational data are available for the travel or tourism industry specifically, most of the travel-related jobs could be classified as unskilled.

In addition, most travel-related jobs are very seasonal. "Seasonality" is defined as the total percentage deviation of high and low monthly employment figures from the average yearly employment level. Using data from the Montana Department of Labor and Industry for the years 1960-1975, hotels were determined to have the highest yearly fluctuation, with a seasonality index of 55 percent (see Table 2.11).

Large seasonal variations in hotel/motel employment mean that substantial numbers of workers in that industry will be unemployed during part of that year; this results in a higher annual unemployment rate. Travel-related activities, although increasing in the winter season, still are concentrated in the summer months as a result of both climate and custom. The author estimates that two thirds of all nonresident travel occur during the summer.

TABLE 4.4

TRIP PURPOSE
CHARACTERISTICS OF NONRESIDENT
VISITORS TO MONTANA
1979

Purpose of Travel	Percentage of Total Nonresident Travel
All tourism	52.4
Visiting friends and relatives	22.6
Recreation or other pleasure	29.8
Business	20.4
Passing through to other destinations	27.3
Total	100.0

Source: *Old West Region Nonresident Travel, Tourism, and Recreation Survey*, prepared by Oblinger-McCaleb, Denver, Colorado, for the Old West Regional Commission, Rapid City, South Dakota, 1980.

Note: Detail may not add to total due to rounding.

TABLE 4.5

SIZE OF PARTY
CHARACTERISTICS OF NONRESIDENT
VISITORS TO MONTANA
1979

Mode of Transportation	Individuals Per-Party		Percentage of Total Nonresident Travel
Automobile	2.56		86.2
Air	1.36		9.1
Bus	1.43		3.2
Rail	2.21*		1.5
Average	2.31	Total	100.0

Source: *Old West Region Nonresident Travel, Tourism, and Recreation Survey*, prepared by Oblinger-McCaleb, Denver, Colorado, for the Old West Regional Commission, Rapid City, South Dakota, 1980.

* Not statistically significant.

TABLE 4.6

EXPENDITURES
CHARACTERISTICS OF NONRESIDENT
VISITORS TO MONTANA
1979

Service Used	Average Expenditure Per-Day	Percentage of Total Nonresident Travel Spending
Hotel/motel	$ 15.64	23.1%
Campgrounds	1.13	1.7%
Eating/drinking	16.72	24.7%
Groceries	3.58	5.3%
Sporting goods	1.17	1.7%
Gas/service stations	18.72	27.7%
Amusement/recreation	3.62	5.4%
Other	7.12	10.5%
Total	$ 67.70	100.0%

Source: Old West Region Nonresident Travel, Tourism, and Recreation Survey, prepared by Oblinger-McCaleb, Denver, Colorado, for the Old West Regional Commission, Rapid City, South Dakota, 1980.

Note: Percentage detail may not add to total due to rounding.

4.1 LOCAL OVERVIEW

The importance of travel and tourism is far greater in the Flathead area than it is for the state as a whole. Approximately one third of all local employment and population growth can be traced to expansion in this sector. Travel and tourism is currently estimated to employ nearly 2,200 people, up 1,300 from a decade ago. Employment growth in this sector exceeded all other basic industries. The author estimates that over two thirds of the local expansion was related to tourism as opposed to business travel.

Table 4.7 illustrates the dramatic increase in tourism at the area's prime destination, Glacier National Park. Between 1960 and 1980 the number of cars counted at Glacier Park more than doubled. The other factors shown in Table 4.7 are also important to the overall increase in travel. These factors include the number of households, real income, and the inflation adjusted price of gasoline. As the number of households and real income rises, travel will also increase. Conversely, as gas prices increase, travel will decline. The reader should note that real gasoline prices were very stable until 1979, the same year that travel dropped. Lately, gas prices have again stabilized, but clearly another round of price increases would again result in less travel.

Figure 4.1 shows the impact of various events on traffic in the park and also provides the author's "best guess" as to what the future will bring.

In order to make the projections (see Figure 4.1) the author developed a simple model which forecasts the number of cars counted as a function of two independent variables--the number of households and the real price of gasoline. Between 1960 and 1980, these two variables accounted for over ninety percent of the variation in the number of cars counted at the gates. By 1990, the number of households is expected to rise by 22 percent, contributing to more travel

TABLE 4.7

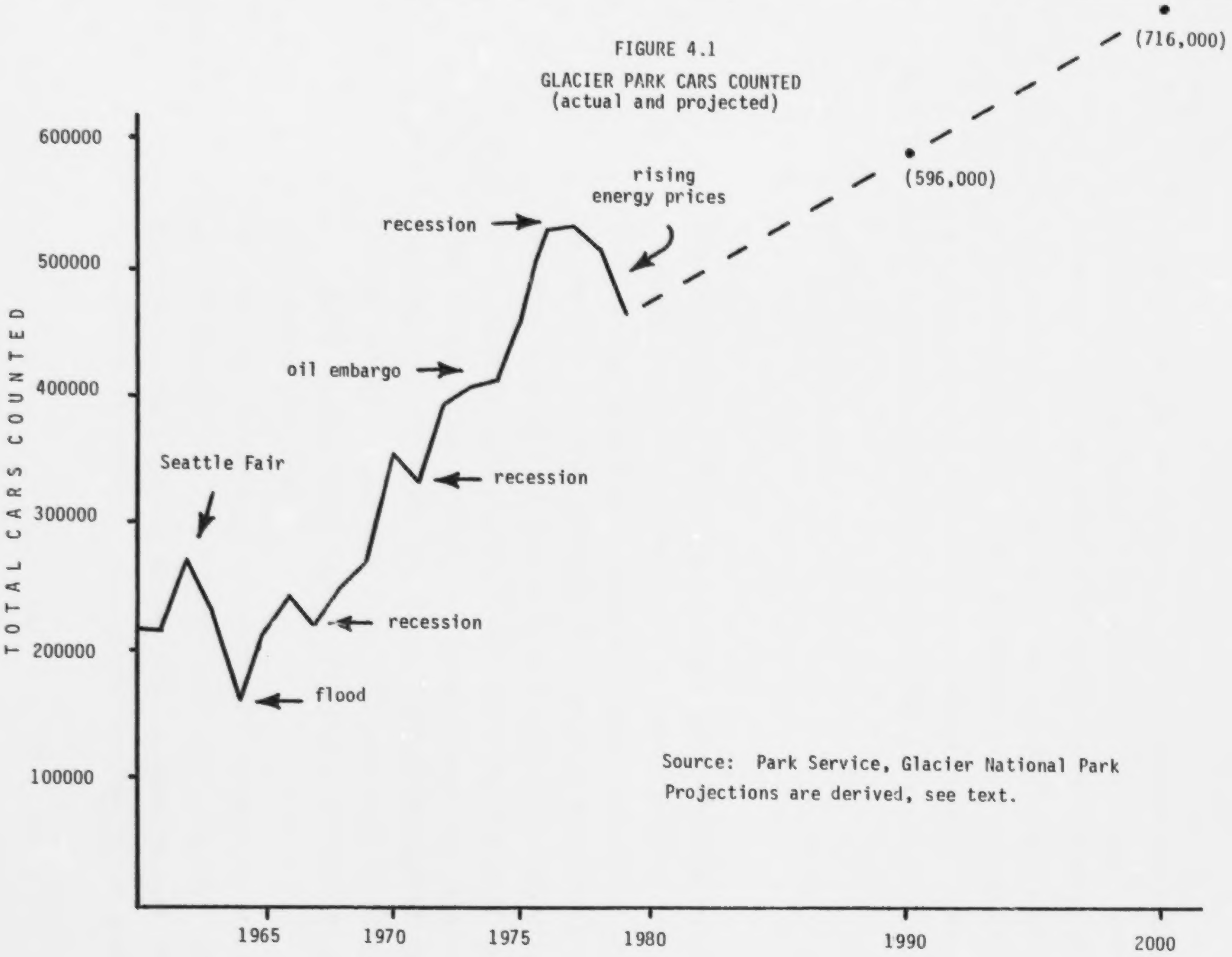
CARS COUNTED AT GLACIER NATIONAL PARK

	Cars (thousands)	U.S. Households (millions)	Real Income ($billions)	Real Gasoline Price (¢/gal.)
1960	215.7	52.8	446.4	23.7
1961	217.9	53.6	459.0	22.9
1963	231.8	55.3	500.7	21.9
1965	216.5	57.4	563.0	22.0
1966	245.9	58.4	595.9	22.2
1967	220.8	59.2	620.0	22.6
1968	263.0	60.8	650.5	22.1
1969	275.8	62.2	672.3	21.8
1970	359.1	63.4	682.3	21.2
1971	335.4	64.4	702.4	20.8
1972	397.1	67.1	746.6	19.5
1973	410.4	68.7	785.3	20.2
1974	413.7	69.9	776.8	27.4
1975	462.2	71.1	774.6	28.2
1976	536.3	72.9	806.0	27.8
1977	534.3	74.1	838.6	27.9
1978	516.5	76.0	876.7	27.2
1979	466.5	77.3	885.2	40.3
1980	476.0	79.1	874.6	49.3

Source: Park Service, unpublished data, Glacier National Park
Department of Commerce, Survey of Current Business

FIGURE 4.1

GLACIER PARK CARS COUNTED
(actual and projected)



Source: Park Service, Glacier National Park
Projections are derived, see text.

(U.S. Bureau of Census). Given federal standards for fleet efficiency, and long-term projections of gasoline cost ($4 in 1990 dollars) by Chase Econometrics, Inc., the real cost of fuel is expected to increase 220 percent by 1990, resulting in less travel.

These factors imply that there will continue to be tourism growth in the area, but that this rate of growth will be less than half the growth experienced during the past decade. This outlook is consistent with the opinions of a variety of individuals who are involved with the industry, both locally and throughout the state. Again, it is important to keep in mind that long-term projections of this nature cannot be precise. Past experience has revealed, however, that increases in travel were related to gasoline prices. With little doubt real gasoline prices will rise.

4.2 THE LOCAL MARKET

Increasing gasoline prices and unpredictable levels of gasoline supplies have changed attitudes towards vacation travel, particularly lengthy automobile trips outside one's home state. These factors are changing the tourism industry in states which are located at a distance from major population centers and dependent on either "pass-through" traffic, or tourists driving to destination attractions. When inflation hits and credit is tight, many consumers elect to cut traveling from their budgets. That has a negative impact on the tourism industry as diminished expenditures can't cover rising costs.

Montana's remoteness (see Table 4.8) is in some respects a blessing--in other respects, it is a curse. Montana is ranked 43 with regard to access to the national population (market) and dead last with regard to regional population access. As a result, Montana's tourism industry is very sensitive to gasoline prices.

In an attempt to analyze the importance of distance on the local market, the author investigated travel patterns between states within Glacier Park's market area (all states exceeding one percent of the total cars counted). As expected travel to Glacier Park is:

- Directly related to population;
- Inversely related to distance between the home state and the park; and
- Inversely related to recreational opportunities found in other states. That is, people from states with a high percentage of public land are less likely to come to Montana.

TABLE 4.8

RANKING OF STATES BY ACCESS TO U.S. NATIONAL MARKETS

	State	Market Access Index
1	Kentucky	47
2	Indiana	47
3	Tennesssee	48
4	Ohio	48
5	Illinois	49
6	West Viginia	49
7	Michigan	49
8	Alabama	51
9	Georgia	51
10	Wisconsin	51
11	Missouri	52
12	South Carolina	52
13	North Carolina	53
14	Mississippi	53
15	Arkansas	54
16	Virginia	54
17	Iowa	55
18	Pennsylvania	55
19	Maryland	56
20	Louisiana	57
21	Delaware	58
21	Minnesota	59
23	Kansas	60
24	Oklahoma	61
25	New Jersey	62
26	New York	62
27	Florida	62
28	Nebraska	63
29	Texas	66
30	Connecticut	67
31	South Dakota	68
32	Vermont	69
33	Rhode Island	72
34	Massachusetts	72
35	New Hampshire	72
36	North Dakota	73
37	Colorado	80
38	Maine	80

39	New Mexico	83
40	Wyoming	86
41	Utah	99
42	Arizona	99
43	MONTANA	100
44	Idaho	109
45	Nevada	112
46	California	122
47	Washington	133
48	Oregon	134

Source: Transportation Access, Working Paper #1 Governor's Office of Commerce and Small Business Development 1978.

In simple terms, this means that large states such as California will constitute a large share of Montana's non-resident market. States that are far removed from the park will be relatively unimportant as a market influence. Similarly, states with ample recreational opportunities will be less likely to find Montana attractive--given local possibilities. These factor's explain approximately two thirds of Glacier's present market. The data used to derive the results are provided in Table 4.9.

Analysis of the Glacier Park area suggests that the probability of traveling to Montana from a given state varies significantly after adjustments for distance are made. For example, all else being equal, Montana is not doing as well as it probably should in the northwest and Canadian markets. Similarly, Montana does better than expected in Minnesota, Michigan, and other states. More careful evaluation of such data should help to increase the success of current state and local advertising efforts.

TABLE 4.9

GLACIER PARK MARKET

Area	Percent of total Market	Access*	Percent of Public Land
Montana	18.6	12.6	30
California	9.4	6.5	45
Alberta	9.4	15.0	60
Minnesota	6.4	2.2	7
Washington	4.7	10.9	30
Illinois	4.7	3.9	2
Michigan	3.6	2.5	9
Wisconsin	3.5	1.8	5
Oregon	2.4	3.6	53
Ohio	2.4	2.5	1
Colorado	2.4	2.8	36
New York	2.3	2.6	1
Iowa	2.1	1.3	1
Texas	1.9	3.0	2
North Dakota	1.7	1.2	5
Idaho	1.6	8.1	64
Utah	1.5	1.6	5
Arizona	1.4	.6	43
Florida	1.4	1.2	10
British Columbia	1.4	4.2	94
Mississippi	1.3	1.8	5
Saskatchwean	1.2	2.3	61
Indiana	1.1	1.7	2
Pennsylvania	1.1	1.7	2
Nebraska	1.0	1.1	1

Sources: Park Service, unpublished data, Glacier National Park Statistical Abstract, Department of Commerce

* Defined as population/distance^2 in millions.

4.3 LOCAL PROJECTIONS

Table 4.10 provides employment scenarios which are based on the traffic projections for Glacier Park (see Figure 4.1). The trend (high) projection is simply an extrapolation of past data (1967-79). In all probability, the historical rate of growth will not be duplicated in the future. The medium scenario is based on 716,000 cars (in 2000) and assumes an increase in stay from the present 3.4 days to 4 days. That is, people may travel less, but stay longer.

TABLE 4.10

TRAVEL AND TOURISM EMPLOYMENT PROJECTIONS
(Flathead and Lake Counties)

	(Trend) High	Medium	Low
1980	2158	2158	2158
1990	3529	2823	2542
2000	4759	3426	2923
increase 1980-2000	2601	1326	765

Assumptions:
High: Long-term trend (1967-79)
Medium: See narrative
Low: Without increase in stay

Source: Derived.

Table 4.11 provides the author's best guess as to the composition of travel, i.e, car, bus, and train.

TABLE 4.11

VISITOR DAYS
GLACIER NATIONAL PARK

	Car	Bus	Train	Total
1970	1,241,603	15,516	2,074*	1,259,193
1980	1,475,538	35,797	2,493**	1,513,828
1990	1,698,600	56,078	3,905	1,758,583
2000	1,969,055	76,359	5,317	2,050,731

* Assumes same as 1980 proportions ** 1979 boardings at Glacier

Assumptions:
1) 2.85 persons per car in 1990 and 2.75 in 2000
2) Amtrack is continued
3) 3.36 days average stay
4) Bus traffic increase (1980-2000) same as 1970-80 increase
5) Train increase similar to bus

4.4 SUMMARY

According to the U.S. Travel Data Center in Washington, D.C., travel costs in the United States increased approximately 30 percent between 1977 and 1979. The figures for 1980 are not available yet, but they are expected to show a percentage increase nearly twice the inflation rate for the year, as gasoline prices rose by nearly 50 percent.

Increasing costs and the concern over fuel availability in 1979 resulted in a substantial downturn in out-of-state as well as in-state travel to Montana's primary recreational sites. For example, yearly traffic at West Yellowstone declined by 11 percent in 1979. The current national picture, while better, nevertheless reflects a growing concern about the costs of long-distance vacation travel. Because of this, the future of Montana's travel and tourist industry is uncertain. "Drive-through" tourists, who tend to be less affluent than the "fly-in" traveler, will probably travel less often, and drive shorter distances when they do. Because of Montana's remoteness from the nation's population centers, the state will probably continue to experience relatively slow growth in this type of travel.

On the other hand, convention and destination type travel seems to be holding up well, and may even increase. Convention and destination resort travelers tend to be more affluent, and may be traveling on expense accounts. In general, they appear to be less affected by high fuel costs than the "drive-through" tourist traveling across country by automobile. Montana has several destination resorts, and numerous cities in the state have convention facilities. Increased emphasis on marketing the state to this type of traveler could help offset the effects of slow growth in automobile travel.

Most travel, however, will continue to be by automobile. There is considerable doubt that AMTRAK will remain in service. Closure of AMTRAK would adversely impact the industry in the Basin, in particular the Big Mountain area where approximately 10,000 skiers annually have relied on rail transportation. Bus travel should increase, however, it is interesting to note that bus travel in the late 1960s exceeded the current level.

5 OTHER BASIC INDUSTRIES

5.0 PRIMARY METALS

In 1970 the Anaconda primary aluminum facility at Columbia Falls reports that employment totaled 1100. By 1980 the overall level had increased to 1334 as a result of plant modernization, i.e., the installation of a more energy efficient process. As of Spring 1981, the number of jobs at the plant had declined to 1228 and is expected to remain at that level indefinitely. Although no employment expansion is anticipated the operation will continue to represent the second largest income producer (next to wood products) in the area. Recently the company announced plans to build a $30 million casting facility which will produce larger ingots for use at the Kentucky mill. This expansion will provide some additional short-term construction jobs but is not expected to influence the number of full time workers. The plant's impact on the long-term growth in the area will be limited to increases in relative wages as opposed to more jobs.

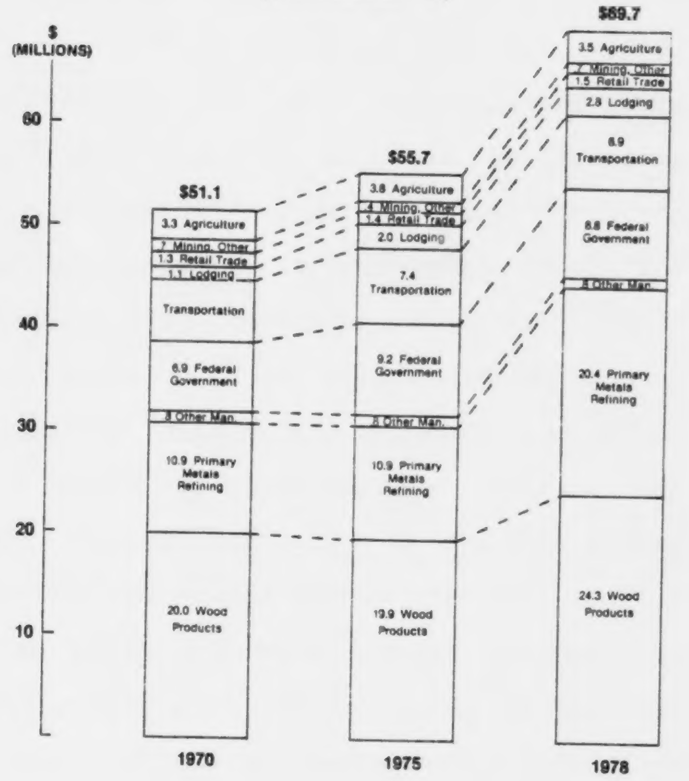
Figure 5.1 helps to show the local importance of aluminum production. During 1978, average employment was 1,336 workers with total earnings of a little more than $20 million (1972) dollars). These earnings represent almost 30 percent of total export earnings during 1978.

Earnings in primary metals refining almost doubled between 1975 and 1978, from just under $11 million (1972

FIGURE 5.1

EARNINGS IN BASIC INDUSTRIES, FLATHEAD COUNTY IN 1972 DOLLARS

(Millions $)



Source: Paul Polzin, Kalispell and the Flathead County Economy, Montana Business Quarterly, University of Montana, Autum 1980.

dollars) to $20 million (1972 dollars). This industry was the largest single contributor to the growth in the economic base during this period. This increase reflects the modifications at the Anaconda plant in Columbia Falls. These modifications were designed to bring this facility into compliance with emission standards and also to reduce the need for electricity. Work on these modifications began in 1977 and was completed during April of 1980. The 1978 figures correspond to the middle of the construction period. Therefore, the 1980 figures may slightly overstate the long-range importance of this industry to the local economy. It should also be pointed out that the plant recently curtailed production in response to a depressed aluminum market. Approximately 100 workers were temporarily laid off in December 1981. Full production will resume after the effects of the national recession end, sometime in late 1982.

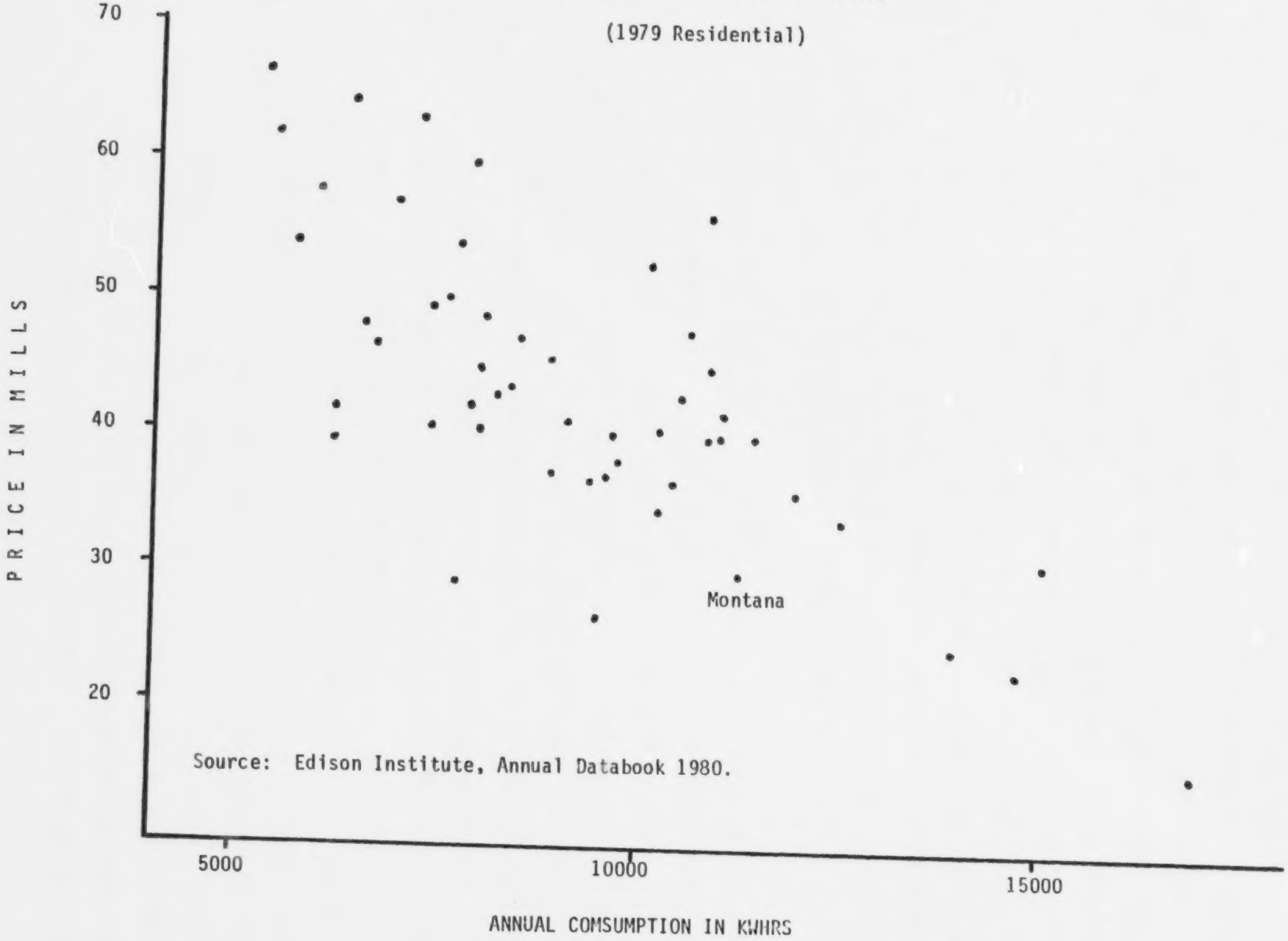
AN OVERVIEW OF THE ALUMINUM INDUSTRY

Aluminum plants employ approximately 13,000 workers in the Pacific Northwest. They also utilize a tremendous amount of electrical power. Industrial end-use of electricity in the Pacific Northwest (PNW) currently totals 60 billion kwhrs with over 40 percent of this power used in the production of aluminum. This high concentration in aluminum reduction was not by accident, but a natural reaction to market forces--cheap power. The days of inexpensive electricity are numbered as progressivly more expensive thermo and nuclear units are added to the existing hydro base. The

FIGURE 5.2

STATE ELECTRICAL USE AND PRICE

(1979 Residential)



Source: Edison Institute, Annual Databook 1980.

PNW still enjoys a substantial edge in low cost power, but this advantage is rapidly eroding. Figure 5.2 shows the current advantage for residential users--industrial price differences are comparable. Note that low cost states use considerably more electricity, a clear quantity--price effect.

Map 5.1, below shows the national location pattern for the aluminum industry. The Columbia Falls operation used power from the Hungry Horse hydro unit constructed several years before the aluminum plant. The Anaconda facility would not have been built in the absence of the dam. This is equally true for nearly all other primary aluminum operations. Note that the further processing (secondary) of most aluminum production takes place in the industrialized region of the nation. Most final consumption also takes place in the more populated areas in the Midwest and East. As both electricial rates and transportation costs (on raw material and ingots) increase, this "may" place PNW plants at a slight disadvantage. No reduction in regional output, however, is expected. But, it is very unlikely that further plants (beyond the proposed Alumax plant) will ever be developed.

A Brief History*

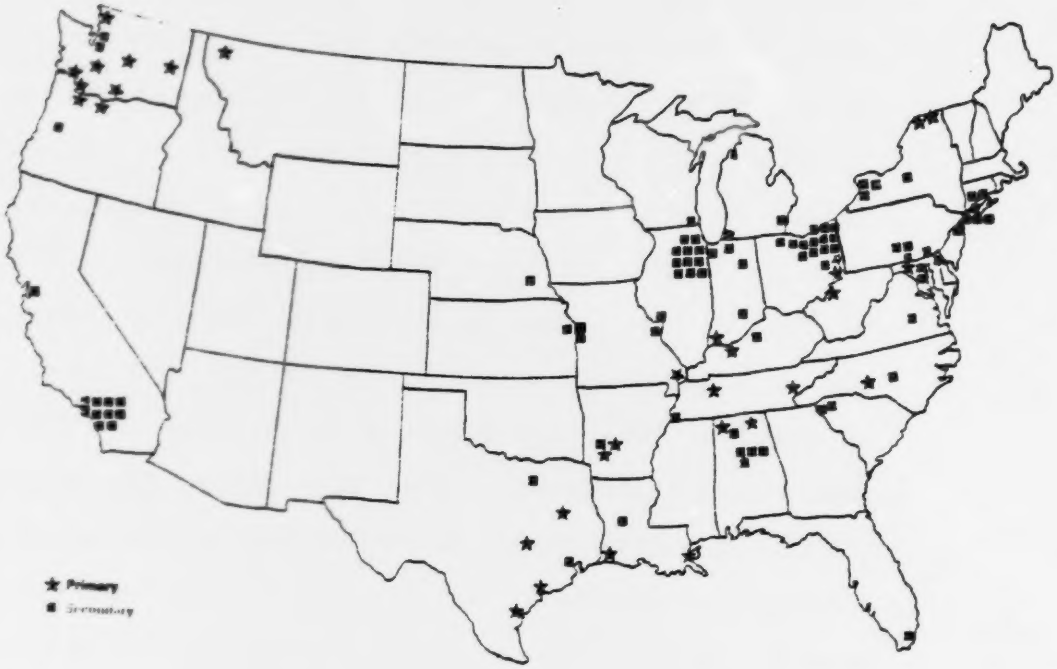
For more than three decades, the aluminum industry in this country has experienced sustained growth. Beginning with military-related uses in World War II, the industry has subsequently expanded into a variety of domestic markets.

---

* Note: This section is edited from "A Regional Analysis: Economic and Fiscal Impact of the Aluminum Industry in the Pacific Northwest, A.D. Little, Inc., 1978.

MAP 5.1

PRIMARY AND SECONDARY ALUMINUM MANUFACTURING


★ Primary
■ Secondary

Source: Aluminum Outlook 1977, U.S. Bureau of Mines, Department of Interior.

Due to the availability of low-cost electric power, the Pacific Northwest has been an important location for much of this industry expansion. However, with growing concern about energy costs and the availability of energy resources, the Pacific Northwest aluminum industry is continually recognizing the need to be responsive to changing market forces and public concerns.

An historical overview will provide a background to the present setting of the aluminum industry in the Pacific Northwest.

1. World War II -- Initial Development of the Aluminum Industry in the Northwest Under the Impetus of a Defense Economy.

In the first part of this century, before World War II, aluminum production focused in the eastern part of the country. Hydroelectric power sites were used in New York in the Niagara Falls and the St. Lawrence River areas and then subsequently in the Tennessee River Valley. With the advent of World War II, the limited power availability nationwide made the Pacific Northwest especially attractive to aluminum production. The newly constructed Bonneville and Grand Coulee dams were especially important in attracting the aluminum industry to the power sources of the area. The Northwest has had the advantage that power costs had held relatively stable for more than three decades, averaging around 0.2 cents per kilowatt-hour since the upsurge in aluminum demand at the beginning of World War II. This has meant a significant regional rate advantage to the Northwest of at least 1.5 mills and often 3-4 mills per kilowatt-hour when compared with other parts of the country.

2. Korean Conflcit -- The Next Major Growth Stage for Aluminum Producers in the Northwest.

1950 marked the beginning of a second major phase in the growth of the aluminum industry in the Northwest. Between 1950 and 1954, nationwide ingot capacity nearly doubled to 1.388 million tons. As with the earlier major growth in the industry this expansion was largely tied to defense-related activity, this time involving the Korean War. A second major factor at this time, however, was the desire of the federal government to stockpile the aluminum in the future. In addition to guaranteeing a market for aluminum, the federal government offered financial incentives on expanded plant capacities through accelerated tax amortization. To meet the demands of the industry, the Pacific Northwest had the energy requirements necessary to take care of about one-third of the expansion between 1950 and 1954. In addition to enlargement of existing facilities, two new Northwest plants were added at Wenatchee, Washington, and Columbia Falls, Montana.

3. Late 1950s and Early 1960s -- Continued Nationwide Aluminum Expansion But a Reduced Role for the Pacific Northwest.

With 1955 another expansion phase occurred with the aluminum market developing for civilian uses as well as expanding foreign markets. In the period of 1955 through 1962 the aluminum industry expanded at a 5% average annual growth rate, a much higher rate than that achieved by other metals. This was due especially to the increased aluminum usage in such areas as construction, transportation, electrical equipment and packaging. While this period showed steady gains in aluminum consumption, the involvement of Pacific Northwest manufacturers was not as dramatic. A large reduction plant construction at The Dalles, Oregon, in 1958 was the only completely new expansion of primary aluminum capacity in the Northwest during this period.

The increased importance of transportation costs in the late 1950s reflected an important competitive factor affecting aluminum production in the Northwest. While the region has always enjoyed a power cost advantage through low-cost hydroelectric power, this advantage has been offset in part by higher transportation costs. Freight rate increases during the 1950s accentuated the importance of this fact. The source of higher transportation costs for the Pacific Northwest is twofold:

- Transport of alumina from refining plants to aluminum reduction works in the Northwest.
- Transport of aluminum ingot from the reduction plants to fabrication points near key markets.

Refining of alumina through the Bayer process originally focused in the Gulf Coast and Arkansas areas because of proximity to bauxite sources. In recent years aluminum refineries have increasingly been built overseas near the bauxite mines in countries like Jamaica. In either case, transportation of finished alumina to Northwest reduction plants was required. Recently transport of alumina by ship has been emphasized because of lower ocean transportation costs. Even with more attractive rates for ocean transport of alumina, this transportation cost is a vital factor for the Pacific Northwest aluminum industry's competitive position. This is especially important because about two pounds of alumina are required for the production of one pound of aluminum.

4. Mid- and late 1960s -- Increasing Expansion of Pacific Northwest Aluminum Production

In the mid-1960s aluminum capacity in the Pacific Northwest increased markedly as the U.S. industry entered a new phase in which excess capacity had been utilized and expansion was again taking place. As the industry once more looked to expansion, the Northwest was in a good position because of the availability of additional power to electroprocess industries through the Bonneville Power Administration. Additional blocks of power became available as the result of new federal generating capacity; the signing of the Canadian Agreement providing for storage reservoirs in Canada; and approval of the California Intertie which provided for the exchange of surplus energy beween the Northwest and Southwest. These developments meant that hydroelectric power was available to the electroprocess industries at a rate of 0.206 cents per kilowatt-hour, which was comparable with that charged some 30 years earlier.

5. 1970s -- Continued Strong Demand in the Face of Supply Shortages

With the 1970s, the aluminum industry in the Northwest continued to experience increased demand as available capacity was fully utilized. While production facilities have expanded in the Northwest aluminum demand has expanded even more rapidly. The strain on capacity has been amplified by price controls -- which held aluminum prices at low levels in the face of this demand increase. In recent years, the industry has not been able to sustain returns high enough to attract the capital required to more fully expand facilities. In the Pacific Northwest, the supply situation has been especially tight because 1973 production was reduced by hydroelectric power shortages due to weather conditions. These production shortages amounted to about 7% of total national annual capacity. The Northwest is also the site of one new reduction plant proposed in the next five years. This is the Amax facility scheduled for construction in Oregon.

CURRENT OUTLOOK - National

Table 5.1 shows the Bureau of Mines (1978) long-range projections of national consumption through the year 2000. U.S. demand for aluminum in metal and nonmetal forms in 2000 is expected to be between 12 and 26 million short tons. Principal factors contributing to the high forecast include increased use of aluminum in the transportation sector of the economy and in a wide variety of both consumer and capital goods. The availability and anticipated low cost of aluminum relative to competing materials such as copper and plastics in the long term also could contribute to attainment of high forecast demand and are expected to result in sustained growth in demand well beyond 2000.

The main contingency factors that could result in a lower forecast are a possible low growth in electric energy use or changes in the means of transmitting electic energy and substitution of other materials for aluminum in machinery, construction, and containers.

Recent developments in aluminum technology and increases in energy costs foreshadow increased use of aluminum in transportation and machinery. Moreover, the price differential between aluminum and copper for electrical applications is expected to continue to favor the use of aluminum as an electrical conductor in the long term. A judgmental evaluation of the effect of these and other contingencies on the statistical projections of aluminum demand in various end-use sectors indicates that the probable U.S. demand for aluminum (metal and nonmetal) in 1985 will be 9.9 million tons, representing an average annual growth rate of 7.1 percent from 1976. After 1985 the growth rate is expected to slow to about 4.3 percent per year for the remainder of the century, averaging 5.3 percent

TABLE 5.1

COMPARISON OF DOMESTIC ALUMINUM DEMAND, 1957-77, AND PROJECTED DEMAND IN 1985 AND 2000

(Thousand short tons)

Year	U.S. Primary Demand
1957	1,822
1958	1,737
1959	2,101
1960	2,060
1961	2,079
1962	2,369
1963	2,702
1964	2,888
1965	3,275
1966	3,903
1967	3,756
1968	4,194
1969	4,328
1970	4,071
1971	4,576
1972	5,290
1973	6,284
1974	5,897
1975	4,160
1976	5,348
1977	5,581
1985	9,850
2000	18,000

Source: Department of Interior, Aluminum Outlook, 1977.

per year for 1976 to 2000 and reaching a demand of 18 million tons in 2000.

REGIONAL ELECTRICAL OUTLOOK

Electrical rates will be, to a great extent, contingent on the Pacific Northwest Electric Power Planning and Conservation Act. The major provisions of the act follow:

> -- A regional planning Council is formed with representation from each of the states. The Council will draw up a plan for meeting the electrical needs of the region, taking into account the social and economic effects of alternative courses of action. The plan must give highest priority to cost-effective conservation, treating it as a resource preferable to all other means of responding to demand for electricity. Renewable sources of energy must be given next highest priority in the region's power planning, to the extent that they are cost-effective ranking ahead of conventional thermal generating resources. Among thermal options, fuel-efficient methods of producing energy must be given priority.
>
> -- Bonneville Power Administration becomes responsible for meeting the loads of customers and managing the regional electrical system to achieve the purposes of the Act relating to fish, system efficiency, and experimental projects. BPA must give priority to cost-effective conservation and renewable resources in meeting the region's needs. BPA may also purchase the generating capabilities of new thermal projects, but only after determination that they are required in addition to all cost-effective conservation and renewables that can be achieved or developed in time. Such projects must also be found reliable and compatible with the regional electric system. BPA will spread the benefits and the costs of resources among all of its customers through its rates.
>
> -- Direct service industries receive new 20-year contracts for power from BPA, but at a higher

> price than they are paying under existing contracts. They will, in effect, pay the cost of rate relief to the residential and farm customers of investor-owned utilities during the first 4 years, and a substantial portion thereafter, which they agreed to do in exchange for assurances of long-term supplies.
>
> -- BPA sells electricity at a rate that reflects the melded cost of Federal hydropower and more expensive thermal resources, conservation, and renewable sources of energy. The Act contains incentives, as well, to encourage conservation and renewables. BPA may credit utilities for their individual actions to implement conservation and renewables.

LOCAL OUTLOOK

No change in either output or employment is likely at the Columbia Falls plant. The facility will continue to provide jobs at the current level and, although no employment expansion is expected this sector will remain the second largest economic (income) force in the area.

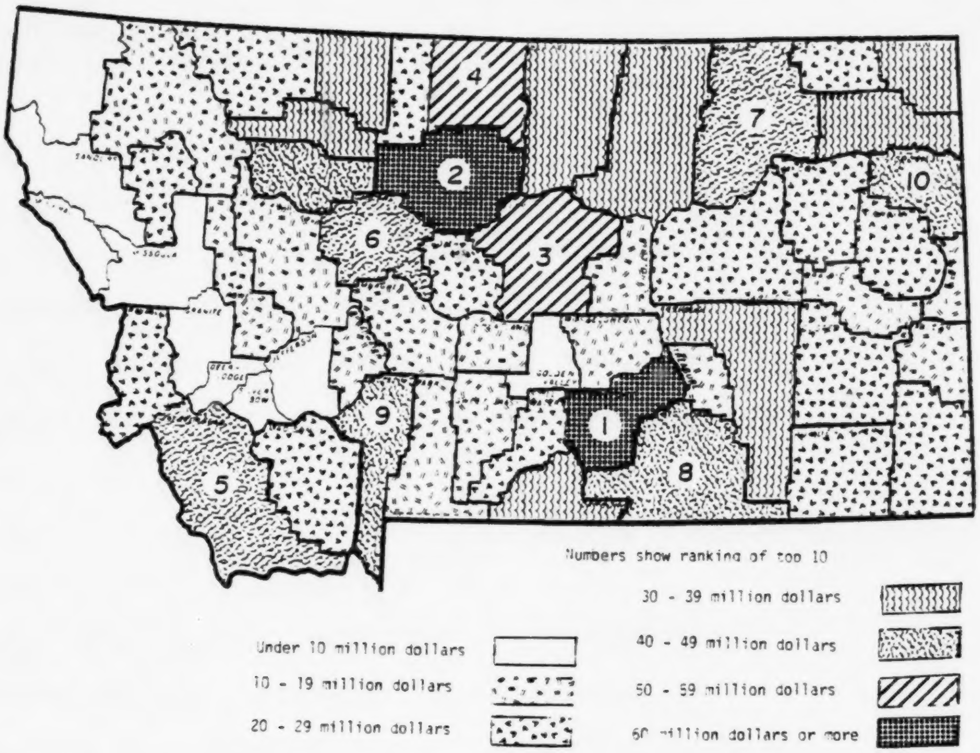
5.1 AGRICULTURE

Agriculture is important to the local area, although not a dominant economic influence. In 1979, Flathead County ranked 38th among Montana's counties (56) in cash receipts. Lake County was ranked 20th. Even though agriculture employes nearly 21 percent of the basic work force in the area, employment is declining and income is relatively minor (See Figure 5.1) when compared to other industrial groups.

MAP 5.2 shows the relative importance of agriculture within Montana. Primary agricultural products within the region are shown in Table 5.2.

MAP 5.2

CASH RECEIPTS FROM FARM MARKETINGS — 1979
Excluding Government Payments


1
2
3
4
5
6
7
8
9
10
Numbers show ranking of top 10
30 - 39 million dollars
40 - 49 million dollars
50 - 59 million dollars
60 million dollars or more
Under 10 million dollars
10 - 19 million dollars
20 - 29 million dollars

Source: Montana Agricultural Statistics, Montana Department of Agriculture.

TABLE 5.2

IMPORTANT AGRICULTURAL PRODUCTS

FLATHEAD AND LAKE COUNTIES

(Cash Receipts 1979)

	Flathead	Lake	Total	Percent of Total
Wheat	$1,971,100	$1,314,200	$3,285,300	6.7%
Barley	3,179,400	1,545,900	4,725,300	9.7%
Oats	94,200	158,700	252,900	0.5%
Hay	3,427,900	6,470,100	9,898,000	20.3%
Livestock	8,951,300	19,602,500	28,553,800	58.6%
Cherries	n/a	n/a	n/a	n/a
All Other	n/a	n/a	n/a	n/a
Total	$15,877,300*	$28,385,900*	$48,727,300	100.0%

Source: Montana Agricultural Statistics, Montana Department of Agriculture.

* Note: Statistical Discrepancy

Farm proprietors' income (income of self-employed farmers) data are notoriously bad. The data represent estimates based on a series of assumptions that do not always reflect reality. Adjustments are made for inventories, the value of homes and gardens, etc. In addition, farm income is estimated from total farm receipts which in turn requires estimates of farm expenses. It also should be pointed out that many farmers and ranchers have second jobs; about 50 percent of the income of farmers is now from non-farm sources. That additional income is not shown in Table 5.3. What the table does indicate is that average farm proprietors' income is very low; $4,423 in Flathead County and only $1,311 in Lake County. Both figures are below the reasonable standards suggesting that farming is either very unprofitable or that the data are incorrect. The author contends that the latter conclusion is more realistic. This data uncertainty presents major forecasting problems which is why the present forecasting system is geared to changes in employment rather than income.

TABLE 5.3

FARM PROPRIETORS INCOME AND EMPLOYMENT

FLATHEAD AND LAKE COUNTIES

	Flathead		Lake	
	Income	Employment	Income	Employment
1974	$6,806,000	841	$5,090,000	1,077
1975	3,898,000	872	1,183,000	1,117
1976	3,246,000	815	785,000	1,043
1977	1,084,000	843	-1,125,000	1,079
1978	4,138,000	774	1,265,000	990
1979	2,536,000	763	1,036,000	975
1974-79 Average	3,618,000	818	1,372,333	1047
1974-79 Average Farm Income per Proprietor	$4,423		$1,311	
1974-79 Percent of Total Income	1.8%		3.3%	
1974-79 Percent of Total Employment	4.1%		17.6%	

Source: U. S. Department of Commerce, Regional Economic Information System.

GROWTH CONSIDERATIONS - STATE*

Montana's agriculture has undergone substantial change. It now is characterized by larger and fewer farms, a smaller work force, greater capital inputs, and growing commercialization. Improved procedures and management have resulted in higher yields. Montana farmers and ranchers are working larger acreages--up 29 percent since 1960--with a corresponding decline in the number of farms, primarily as a result of improved technology. The continuing migration of farm labor has affected not only rural areas but urban centers as well. And, to this day, many agricultural areas are still experiencing outmigration.

This rapid change, largely a product of technology, has had good and bad effects. Clearly, the ability to produce more and more each year has been good for a hungry world, but bad for individual farmers and ranchers as a result of unacceptable prices--mirrored by a host of federal subsidies in the 1950s, 1960s and early 1970s. Agriculture, more so than any other industry, is subject to boom and bust cycles through climatic whim and changes in demand on a world-wide basis, changes which affect not only the agricultural communities but also the overall economy of Montana.

Output trends in agriculture are somewhat difficult to interpret as a result of climatic and market variations. For example, cattle and calf production is very sensitive to prices. Although the state's herds are now building production is still less than that in the early 1970s. Also, a substantial amount of the increase in grain production (1975-76) was the result of unusually high moisture. Another reason for the long-term increase in grain output is that the amount of land under cultivation has risen approximately 10 percent.

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* Abridged from Economic Conditions In Montana, Report of the Governor, 1980, Office of the Governor, 1980.

Transportation is basic to all economic development and is of primary importance to agriculture. All sectors of the economy need reasonable rates, good services, and efficient and integrated transportation systems. Rising energy costs and rail abandonment will strain agriculture's potential for growth.

In addition to potential transportation problems, the overall energy input to the food system has grown nearly eight times as fast as the food energy produced. Rapid increases in fertilizer and fuel prices can be anticipated. This also could slow output increases.

Although the number of irrigated farms has increased seven percent over the last decade, the proportion of output from irrigated land to the total crop has remained unchanged. Furthermore, within the last few years the irrigated acreage has declined somewhat, possibly a reaction to lower grain prices. This slow growth is not encouraging. In addition, only small improvements in irrigation efficiency associated with current practices are expected to occur in the future. Widespread application of new technology to achieve significantly increased irrigation efficiency will be stifled without changes in water rights distribution or major public program incentives.

In all probability, the single most important factor influencing future agricultural output will be the overall level of world demand, including the ability to pay. Rising populations particularly in developing countries, may more than double export demand within the next decade. Further, long-term declines in food reserves and the more current downturn in worldwide grain output per hectare will continue to place a greater emphasis on the nation's ability to produce.

Another potential technical change which may affect Montana is the increasing feasibility of ethanol from grain. Opinions surrounding the viability of synthetic fuel from grain (or other inputs) are extremely divergent. However, a major increase in the real price of gasoline may quickly move this process into the realm of practicality.

OUTLOOK - LOCAL AREA

Total farm related employment (proprietors, laborers and service workers) is expected to continue to decline in Flathead County but at a rate slower than the historical trend. Employment is also projected to decline in Lake County at the same rate. Both projections call for a 20 percent decline by the year 2000.

TABLE 5.4

TOTAL AGRICULTURAL EMPLOYMENT FLATHEAD AND LAKE COUNTIES

	Flathead		Lake	
	Forecast	Trend	Forecast	Trend
1978	976	976	1286	1286
1990	854	749	1197	1295
2000	771	552	1123	1245

Source: Montana Department of Administration, MASS II Model.

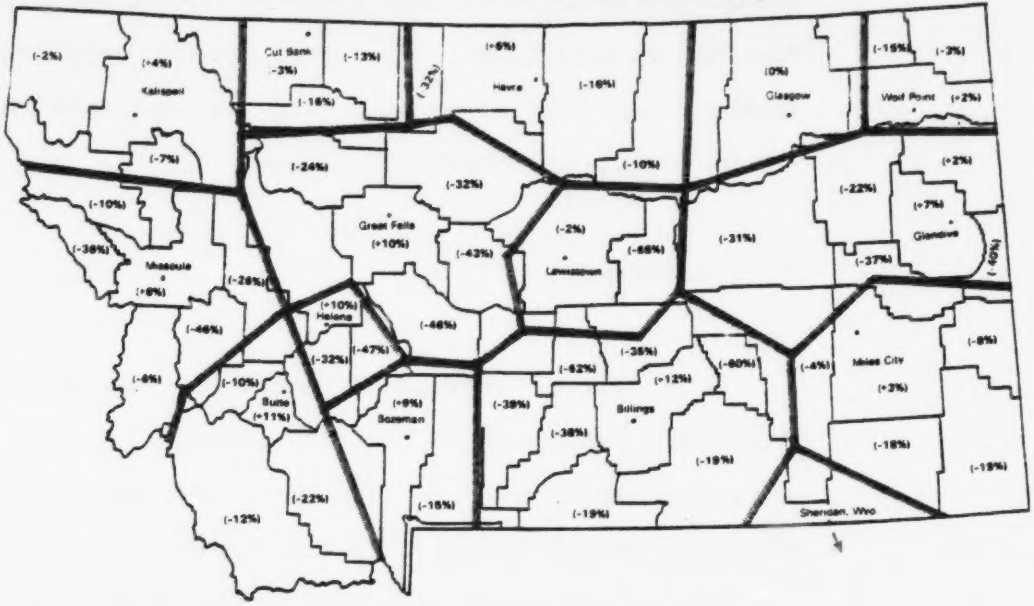
5.2 TRADE CENTER INCOME AND EMPLOYMENT

Chapter Two discussed the importance of retail trade to the area. Approximately 11 percent of local basic employment is derived from people outside the area, shopping in the area. Roughly the same proportion of growth throughout the last decade can be associated with such trade flows. The present analysis does not forecast future economic activity in the surrounding region (including Canada) which largely determine the flows. This influence is assumed to be constant. This section, however, discusses the nature of external flows and their source.

Map 5.3 shows trade centers within Montana. This map indicates the trading area for principal cities and an estimate of how much is "lost or gained" between counties; for example, Billings gets 12 percent of its trade from other counties. Negative values indicate trade losses to other areas. In the case of Flathead County, approximately

MAP 5.7

MONTANA'S PRIMARY RETAIL TRADE AREAS
(Percent of Trade Gained or Lost)


(-2%)
(+4%)
Kalispell
Cut Bank
-3%)
(-13%)
(-16%)
(-32%)
(+6%)
Havre
(-16%)
(0%)
Glasgow
(-15%)
(-3%)
Wolf Point
(+2%)
(-7%)
(-24%)
(-32%)
(-10%)
(-22%)
(+2%)
(-10%)
Great Falls
(+10%)
(-2%)
(+7%)
(-38%)
Missoula
(+6%)
(-43%)
Lewistown
(-66%)
(-31%)
(-37%)
Glendive
(-40%)
(-26%)
(+10%)
Helena
(-46%)
(-46%)
(-47%)
(-32%)
(-35%)
(-60%)
(-4%)
Miles City
(+3%)
(-8%)
(-62%)
(+12%)
(-6%)
(-10%)
Butte
(+11%)
(+6%)
Bozeman
(-39%)
Billings
(-38%)
(-19%)
(-18%)
(-19%)
(-22%)
(-12%)
(-16%)
(-19%)
Sheridan, Wyo

Source: Governor's Office of Commerce and Small Business Development, Economic Conditions in Montana, Report to the Governor, 1980.

4 percent of the trade is from outside. Lake County, losses trade to both Flathead and Missoula Counties resulting in an outflow of 7 percent of local trade.

The estimates were statistically derived from shopping patterns across the state where distance and population were the major variables. In other words, large cities attract trade from smaller cities and as distance increases the effect is proportionately smaller.

5.3 GOVERNMENT

The Federal government presently employs 720 people in Flathead County and 272 in Lake. In 1969, ten years earlier, employment levels were 519 and 275 respectively. Although growth occurred in the local area, the overall rate of growth was less than the state norm. And, only part (perhaps fifty percent) of the total level, can be considered "basic" to the region--that part being associated with forest management and the Park Service.

The federal government category includes the workers employed by the U.S. Forest Service, the Post Office, the National Park Service (which administers Glacier National Park), the Department of the Interior (which administers the Hungry Horse Dam), and other federal agencies which maintain an office in Flathead County. Even though there has been some growth in the number of federal employees, the variations in real earnings primarily reflect changes in the federal pay scale. During the early 1970s the pay increases of federal workers usually exceeded the inflation rate. On the other hand, the recent changes have been less than the inflation rate.

In a relative sense, the local importance of the federal government has been declining since growth has been more rapid in other areas of Montana. Over the past decade, government has not represented a significant contribution to local growth, and when compared to other basic industries (see Table 2.4) is not a major influence on the area's economy. *No increases or decreases are expected in the future*. *A constant level is assumed*.

5.4 OIL AND GAS

The recent discovery of major hydrocarbon accumulations in southwestern Wyoming and northeastern Utah has stimulated disturbed belt exploration in western North America. These discoveries combined with the past exploration success in the Canadian portion of the disturbed belt has created renewed interest in the oil and gas potential of northwestern Montana. The significant fields in Alberta total 6 Tcf (trillion cubic feet) of gas. The gas-in-place reserves for the Waterton, Alberta field alone, which is the closest field to the international border, are 3.6 Tcf. These fields in Canada are important to note because the structure, stratigraphy, and geologic history are similar to the disturbed belt of northwestern Montana. Encouraging gas shows were encountered in the Montana disturbed belt in the 1950s when as much as 6.3 billion cubic feet of gas per day was tested from several wells in the Blackfeet Creek and East Glacier Park areas. These wells, however, were shut-down because the region was too remote and the price of gas was too low for profitable production.

Increasing energy prices have accelerated the exploration. Table 5.5 shows the present level of interest in the Flathead National Forest.

TABLE 5.5

GAS AND OIL LEASE APPLICATIONS
FLATHEAD NATIONAL FOREST
April, 9, 1980

Name of Applicant	Acres	No. of Applications
Berklund	23,033	14
Tanner	18,498	11
Kohlman	76,999	33
Chorney	20,182	9
Gulf	88,960	36
Amick	3,989	2
Crest	41,848	19
Snyder	15,306	6
Texas Pacific	207,786	84
Texaco	53,786	25
David	10,121	4
Karr, et. al	1,280	2
Keating	54,077	25
Phillips Petroleum	156,908	80
Georgakis	604	1
Tesoro Petroleum Corp.	17,402	7
Connelly	35,839	19
Hatch	2,404	1
Anderson, Ida L.	71,737	31
Anderson, John R.	14,148	6
Emerald Oil Co.	18,003	8
Rutter	24,993	12
Grover	2,437	1
Western Interstate Energy, Inc.	1,200	1
Total	961,576	437

Source: U.S. Forest Service, Flathead National Forest.

A more general summary of current activity follows:

Wilderness Seismic Exploration - An application to conduct helicopter portable, surface explosive, seismic exploration work in the Bob Marshall and Great Bear Wildernesses, was received from a Denver based geophysical exploration firm. After an indepth environmental analysis by a team of Forest Service specialists, Regional Forester Tom Coston denied their application for exploration within the Wilderness.

Wilderness Leasing - The Flathead Forest has received 141 applications for oil and gas leases, on 280,000 acreas in the Bob Marshall and Great Bear Wildernesses. We have been informed that more lease applications are imminent. Some of these lease applications have been pending since 1974.

Lease Applications Outside of Wilderness - During April 1980, the Flathead National Forest initiated an Environmental Analysis (EA) of 296 lease applications, covering 680,000 acres of National Forest land outside of wilderness. Additional lease applications are expected. This EA will include a "process" which will be used as a base to recommend new oil and gas lease applications, as well as specific recommendations for the existing applications.

LOCAL OUTLOOK

Dr. Sid Groff, State Geologist, with the Montana School of Mines at Butte, has indicated that the local potential for major finds is small.* Local exploration will continue, but due to the local geological formation, oil and gas wells would very likely be extremely deep and not as profitable as parts of the disturbed belt east of the continental divide. Discoveries, if any, would be gas which is not currently in short supply. Major activity from Browning to the south is almost a certainty.

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* Personal communication with Dr. Groff, April 1981.

Oil and gas, like gold, is where you find it. Until an actual discovery is made--nobody really knows where it is. Therefore, all projections must be by scenario or assumption only. Some exploration is expected and some discoveries are possible. Three scenarios are shown in Table 5.6. In the medium scenario, a workforce of 100 employees consists of 20 production workers, an exploration crew of 10, and a development drilling crew of 70 per oil and gas field. The high scenario assumes significant finds.

TABLE 5.6

OIL AND GAS EXPLORATION
EMPLOYMENT SCENARIOS
FLATHEAD AND LAKE COUNTIES

	Flathead 1985-2000	Lake 1985-2000
Low	0	0
Medium	100	100
High	500	500

Source: Assumed

5.5 OTHER DEVELOPMENTS

Proposed open-pit coal mines in British Columbia could have a damaging impact on Glacier National Park. Economic impacts are however, expected to be minimal due to access problems to Kalispell. Economic and social impacts will be felt, for the most part in Canada, due to transportation access to Columbia Falls and Kalispell. Economic impacts will be to the north; environmental impacts will follow the natural flow in the basin (i.e. downstream) or wind patterns.

The most immediate proposal being put forward by Sage Creek Coal Company Ltd., a joint venture being Rio Algom Ltd. and Pan Ocean Oil Ltd., calls for an open-pit mine 1,000 feet deep and one mile across, that would produce approximately two million tons of a high-grade metallurgical grade coal a year. The Sage Creek Coal Company Ltd., expected to submit its final design plan and environmental assessment to the British Columbia government for approval sometime during 1982. The firm has tentatively secured port space in Vancouver for transhipment of the remote mine's anticipated production of two million tons of thermal coal.

The development was postponed about two years ago because the market for metallurgical coal--used primarily in steel mills--slumped. Now the company plans to mine thermal coal for use in power plants, a market which is improving. Since thermal coal has less stringent quality control requirements, handling of the coal is reduced considerably, bringing the value of thermal coal much closer to metallurgical coal.

The firm hopes to sign tentative contracts with companies in Pacific Rim countries, sometime in early 1982. Final contracts will hinge on approval of the project by the British Columbia government.

In addition to the Cabin Creek Coal deposits held by Sage Creek Coal Company, a number of other deposits exist in the British Columbian portion of the basin. Crownsnest Resources, a subsidiary of Shell Canada Ltd., owns coal leases at the headwaters of Cabin Creek and in the vacinity of the Flathead townsite. The Cabin Creek deposits would likely be developed in conjunction with the development of a mine by Sage Creek Coal Company. The Flathead townsite deposits have undergone some preliminary investigations, but the company has no plans to develop this coal in the near future, although these deposits are relatively close to rail transportation.

The sale of coal within the United States has significantly slowed within the last few years since less electricity is being used (per household) as a result of rapidly rising prices. The annual growth rate has dropped from seven percent to less than three percent annually. The foreign effect on environmental impact is not known, however, it is the author's opinion that coal development may be unfeasible in the North Fork Flathead River Valley at this time. The higher BTU coal and better transportation from Alaska, the opening of a major new metallurgical coal field in the northeastern British Columbia, and the existing coal capacity in the Elk Valley, coupled with the transportation and labor problems associated with the proposal to mine coal just north of the border, all contribute to this opinion. The recent take-over of Marathon Oil Co., by U.S. Steel could further complicate the situation, since Pan Ocean Oil Co., Ltd., a partner in the Sage Creek venture, is a wholely owned subsidiary of Marathon Oil. The Japanese, in particular, have nevertheless attempted to secure coal from diversified sources (economical and political), meaning that the proposed project could result. The Japanese are not just interested in price, but also in secure contracts.

The local economic impact of Canadian mining activity is assumed to be insignificant.

6 EMPLOYMENT AND POPULATION PROJECTIONS

6.0 INTRODUCTION

The purpose of the previous chapters was to develop employment scenarios (high, medium, low) for each of the basic sectors within the Flathead Basin. As was discussed in Chapter 2, all of the population growth and nearly all of the nonbasic employment growth over the past decade can be traced directly back to changes in the area's underlying economic base. Future growth within the region will be linked to corresponding employment levels in wood products, tourism, primary metals, etc. The present chapter utilizes an economic/demographic model called MASS II (MASS being short for Montana Alternative Simulation System) which projects growth based on our best guesses concerning future employment levels in the essential basic sectors.

The MASS model was designed specifically to provide the best posible mechanism for forecasting growth in the Flathead Basin as well as in other Montana counties. As with all long-term projections, the projections are subject to considerable uncertainty. The future cannot be predicted with refined accuracy. However, projections are an important part of planning for the future. The following long-range growth scenarios represent the author's "best idea" as to what the next two decades will bring for the Flathead Basin.

6.1 MODEL DESIGN

The MASS II Model is conceptually straightforward and can be described in a series of steps.

I. The first step is to project employment in the study area. The basic industries (wood products, tourism, primary metals, agriculture, etc.) are particularly important since these industries determine the level of nonbasic (or secondary) employment and also the overall population. Projections (time and judgmental) are made for each basic sector separately and the individual projections are added to produce a projection of total basic activity.

II. Once the basic employment projection total is determined, the next step is to calculate the level of secondary activity that would be supported by basic employment. Secondary or nonbasic employment includes most of retail trade, services, local government, etc.

III. The nonbasic and basic employment levels are added to yield total projected employment. A population projection is then derived from the employment level.

IV. The population level that is consistent with expected employment is compared to the population level that would have occurred based simply on state/county trends in births and deaths. The second projection often is called the "natural" population level. If the natural level is greater than the population level which would be supported by expected employment, it means that people are leaving the area in search of jobs outside the region. On the other hand, if the natural level is less than the employment based population level, it implies that people are migrating into the area.

6.2 INPUTS AND OUTPUTS

Inputs to the model include projected basic employment in:

- wood products
- tourism
- primary metals
- agriculture
- construction
- mining
- federal government
- and other basic sectors

All essential inputs are contained in the preceeding chapters.

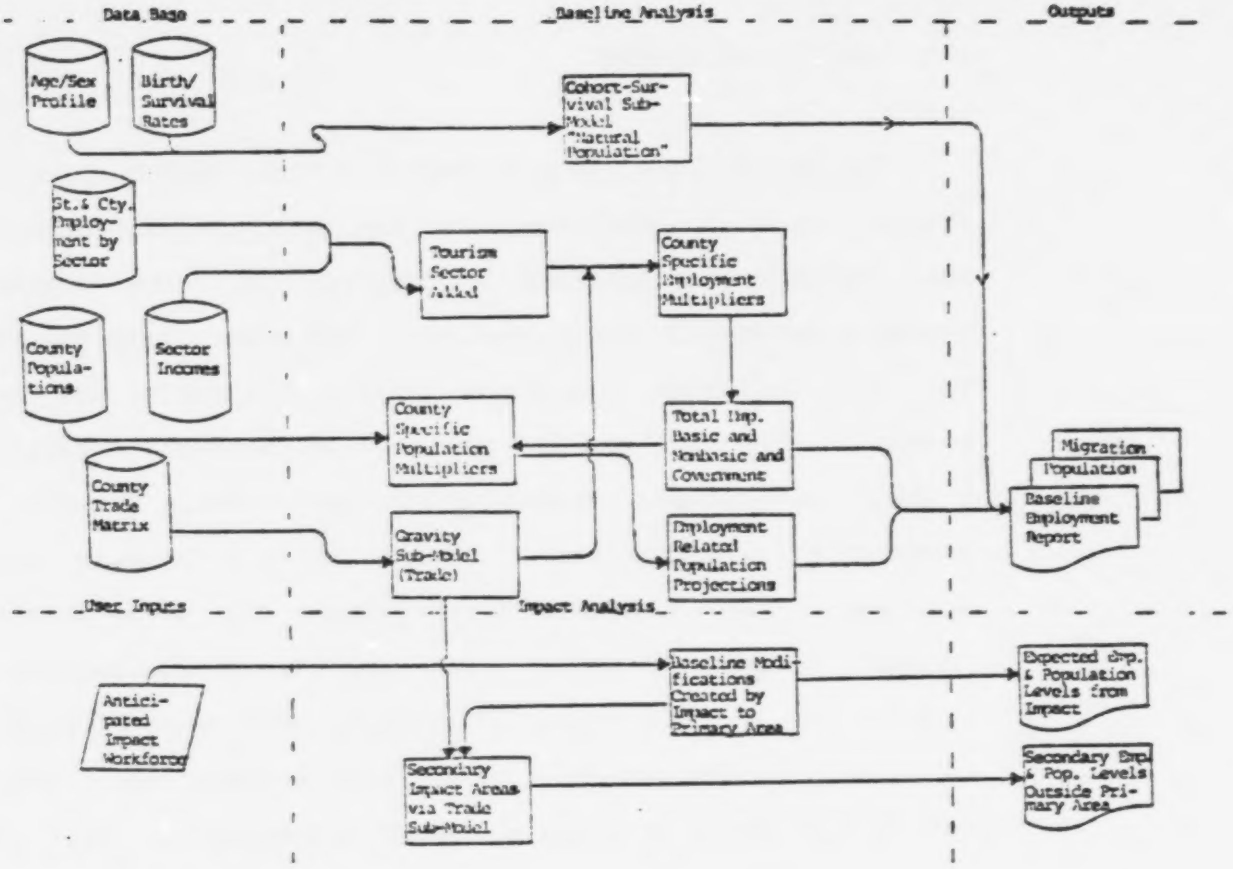
Outputs from the model include:

- total employment
- total population
- natural population growth
- migration; i.e., the difference between employment based population and population based on births and deaths.

Figure 6.1 shows the model structure in a more detailed format. The technically inclined reader is advised to review the technical Appendix (under separate cover) for a full explanation of the projection methodology. The Appendix is available, on request, from the Research and

FIGURE 6.1

MASS II MODEL


Data Base
Baseline Analysis
Outputs
Age/Sex Profile
Birth/ Survival Rates
Cohort-Survival Sub-Model "Natural Population"
St.& Cty. Employment by Sector
Tourism Sector Added
County Specific Employment Multipliers
County Populations
Sector Incomes
County Specific Population Multipliers
Total Emp. Basic and Nonbasic and Government
Migration
Population
Baseline Employment Report
County Trade Matrix
Gravity Sub-Model (Trade)
Employment Related Population Projections
User Inputs
Impact Analysis
Baseline Modifications Created by Impact to Primary Area
Expected Emp. & Population Levels from Impact
Anticipated Impact Workforce
Secondary Impact Areas via Trade Sub-Model
Secondary Emp. & Pop. Levels Outside Primary Area

Source: Montana Department of Administration, Research and Statistical Services Bureau

Statistical Services Bureau, Montana Department of Administration. Working papers containing other operational assumptions are also available from the same agency.

6.3 PROJECTION FORMAT

The projections are provided in a high, medium, and low format, which are consistent with the basic industry employment assumptions contained in Chapters 3-5. The "medium" scenario is in all cases considered the most likely future. The low and high scenarios, while plausible are not probable. The high and low projections, however, establish a band of economic events which very likely cover all reasonable contingencies. Tables 6.1-6.6 provide this spectrum. (The planning focus within the area should, however, concentrate on the "best guess" or medium outlook.) Figures 6.2 and 6.3 graphically depict the range of possibilities for each county. Region wide projections of population are shown in Table 6.7 (medium scenario). City and county disaggregations are provided in the following section.

IN ALL CASES, THE PROJECTIONS INDICATE THAT BOTH EMPLOYMENT AND POPULATION GROWTH WILL SLOW FROM THE LAST DECADE. NEVERTHELESS, THE MEDIUM SCENARIO DEPICTS A HEALTHY ECONOMY FOR BOTH COUNTIES. GROWTH WILL CONTINUE, BUT AT A SLOWER RATE THAN EXPERIENCED IN THE 1970S. FUTURE JOB GROWTH WILL OUTPACE THE NATURAL POPULATION GROWTH RESULTING

IN CONTINUED IN-MIGRATION, WHICH IS A HEALTHY SIGN FOR THE AREA. IN TERMS OF TOTAL POPULATION INCREASE, BOTH COUNTIES ARE EXPECTED TO INCREASE SLIGHTLY OVER 15,000 THROUGH THE YEAR 2,000 VERSUS 17,000 BETWEEN 1970 AND 1980. THE FORECASTED GROWTH IS APPROXIMATELY ONE-THIRD OF THE 1970-80 RATE.

The reader should note that the projected changes in basic employment shown in the following tables also include numerous residual basic categories which were not discussed in the preceeding chapters. These sectors (construction, nonfarm proprietors, other manufacturing, etc.) were forecasted based on trend or judgment. As a result, the sum of projected total basic employment shown below is higher than the summed growth for timber, tourism, agriculture, government and primary metals. Individually, no one specific residual basic sector has a significant growth impact, however, collectively, they significantly contribute to growth. For example, the residual manufacturing category is expected to grow by nearly 300 jobs (through 2000), eating and drinking is expected to increase by approximately 50 jobs, and the basic component of services is forecast to rise by a similar amount. The reader should also be aware of a 300 job increase in heavy construction and a projected 600 job rise in nonfarm proprietors (self-employed persons). The author assumes that at least half of the increase in construction is associated with the expansion of wood products, and that up to one-half of the increase in proprietors is linked directly to the tourism industry.

TABLE 6.1

MEDIUM SCENARIO
(Flathead)

	1970	1980	Annual Growth Rate 1970-80	1990	2000	Annual Growth Rate 1980-2000	Percent of 1970-80 Growth Rate
Basic Employment	6,692	(1979)* 8,460	2.64%	9,567	10,775	1.16%	44%
Total Employment	14,453	(1979)* 21,893	4.72%	26,573	31,478	1.74%	37%
Population	39,460	51,966	2.79%	57,128	62,451	.92%	33%
Natural Growth Population Level**	n/a	51,966	n/a	56,427	59,024	n/a	n/a
Migration**	n/a	(1970-80) 9,400	n/a	(1980-90) 701	(1980-2000) 3,427	n/a	n/a

* 1979: Employment estimates by Montana Department of Administration

** Note: Population level based on expected births and deaths; Series II--U.S. Bureau of the Census. Migration levels are estimated from state vital rates.

Sources: Research and Statistical Services Bureau, Montana Department of Administation, MASS II Model; U.S. Bureau of the Census, 1980 Census of Population, Vol. 1, Characteristics of the Population, Chapter A, Number of Inhabitants Montana, October 1981.

TABLE 6.2

MEDIUM SCENARIO
(Lake)

Category	1970	1980	Annual Growth Rate 1970-80	1990	2000	Annual Growth Rate 1980-2000	Percent of 1970-80 Growth Rate
Basic Employment	2,186	(1979)* 2,590	1.9%	2,914	3,165	1.0%	53%
Total Employment	4,450	(1979)* 6,388	4.1%	7,737	8,842	1.6%	39%
Population	14,445	19,056	3.1%	21,853	23,761	1.1%	35%
Natural Growth Population Level**	n/a	19,056	n/a	20,301	21,161	n/a	n/a
Migration**	n/a	(1970-80) 3,400	n/a	(1980-90) 1,552	(1980-2000) 2,600	n/a	n/a

* 1979: Employment estimates by Montana Department of Administration

** Note: Population level based on expected births and deaths; Series II--U.S. Bureau of the Census. Migration levels are estimated from state vital rates.

Sources: Research and Statistical Services Bureau, Montana Department of Administation, MASS II Model; U.S. Bureau of the Census, 1980 Census of Population, Vol. 1, Characteristics of the Population, Chapter A, Number of Inhabitants Montana, October 1981.

TABLE 6.3

LOW SCENARIO
(Flathead)

	1970	1980	Annual Growth Rate 1970-80	1990	2000	Annual Growth Rate 1980-2000	Percent of 1970-80 Growth Rate
Basic Employment	6,692	(1979)* 8,460	2.64%	8,988	9,712	0.66%	25%
Total Employment	14,453	(1979)* 21,893	4.72%	24,964	28,373	1.24%	26%
Population	39,460	51,966	2.79%	53,888	56,767	0.45%	16%
Natural Growth Population Level**	n/a	51,966	n/a	56,427	59,024	n/a	n/a
Migration**	n/a	(1970-80) 9,400	n/a	(1980-90) -2,539	(1980-2000) -2,257	n/a	n/a

* 1979: Employment estimates by Montana Department of Administration

** Note: Population level based on expected births and deaths; Series II--U.S. Bureau of the Census. Migration levels are estimated from state vital rates.

Sources: Research and Statistical Services Bureau, Montana Department of Administation, MASS II Model; U.S. Bureau of the Census, 1980 Census of Population, Vol. 1, Characteristics of the Population, Chapter A, Number of Inhabitants Montana, October 1981.

TABLE 6.4

LOW SCENARIO
(Lake)

Category	1970	1980	Annual Growth Rate 1970-80	1990	2000	Annual Growth Rate 1980-2000	Percent of 1970-80 Growth Rate
Basic Employment	2,186	(1979)* 2,590	1.9%	2,750	2,938	0.6%	32%
Total Employment	4,450	(1979)* 6,388	4.1%	7,302	8,208	1.2%	29%
Population	14,445	19,056	3.1%	20,349	21,772	0.7%	23%
Natural Growth Population Level**	n/a	19,056	n/a	20,301	21,161	n/a	n/a
Migration**	n/a	(1970-80) 3,400	n/a	(1980-90) 48	(1980-2000) 611	n/a	n/a

* 1979: Employment estimates by Montana Department of Administration

** Note: Population level based on expected births and deaths; Series II--U.S. Bureau of the Census. Migration levels are estimated from state vital rates.

Sources: Research and Statistical Services Bureau, Montana Department of Administation, MASS II Model; U.S. Bureau of the Census, 1980 Census of Population, Vol. 1, Characteristics of the Population, Chapter A, Number of Inhabitants Montana, October 1981.

TABLE 6.5

HIGH SCENARIO
(Flathead)

Category	1970	1980	Annual Growth Rate 1970-80	1990	2000	Annual Growth Rate 1980-2000	Percent of 1970-80 Growth Rate
Basic Employment	6,692	(1979)* 8,460	2.64%	10,859	12,820	2.0%	76%
Total Employment	14,453	(1979)* 21,893	4.72%	30,162	37,454	2.6%	55%
Population	39,460	51,966	2.79%	64,185	72,779	1.7%	61%
Natural Growth Population Level**	n/a	51,966	n/a	56,427	59,024	n/a	n/a
Migration**	n/a	(1970-80) 9,400	n/a	(1980-90) 7,758	(1980-2000) 13,755	n/a	n/a

* 1979: Employment estimates by Montana Department of Administration

** Note: Population level based on expected births and deaths; Series II--U.S. Bureau of the Census. Migration levels are estimated from state vital rates.

Sources: Research and Statistical Services Bureau, Montana Department of Administation, MASS II Model; U.S. Bureau of the Census, 1980 Census of Population, Vol. 1, Characteristics of the Population, Chapter A, Number of Inhabitants Montana, October 1981.

TABLE 6.6

HIGH SCENARIO
(Lake)

Category	1970	1980	Annual Growth Rate 1970-80	1990	2000	Annual Growth Rate 1980-2000	Percent of 1970-80 Growth Rate
Basic Employment	2,186	(1979)* 2,590	1.9%	3,395	3,730	1.8%	95%
Total Employment	4,450	(1979)* 6,388	4.1%	9,014	10,420	2.4%	59%
Population	14,445	19,056	3.1%	26,441	28,916	2.1%	68%
Natural Growth Population Level**	n/a	19,056	n/a	20,301	21,161	n/a	n/a
Migration**	n/a	(1970-80) 3,400	n/a	(1980-90) 6,140	(1980-2000) 7,755	n/a	n/a

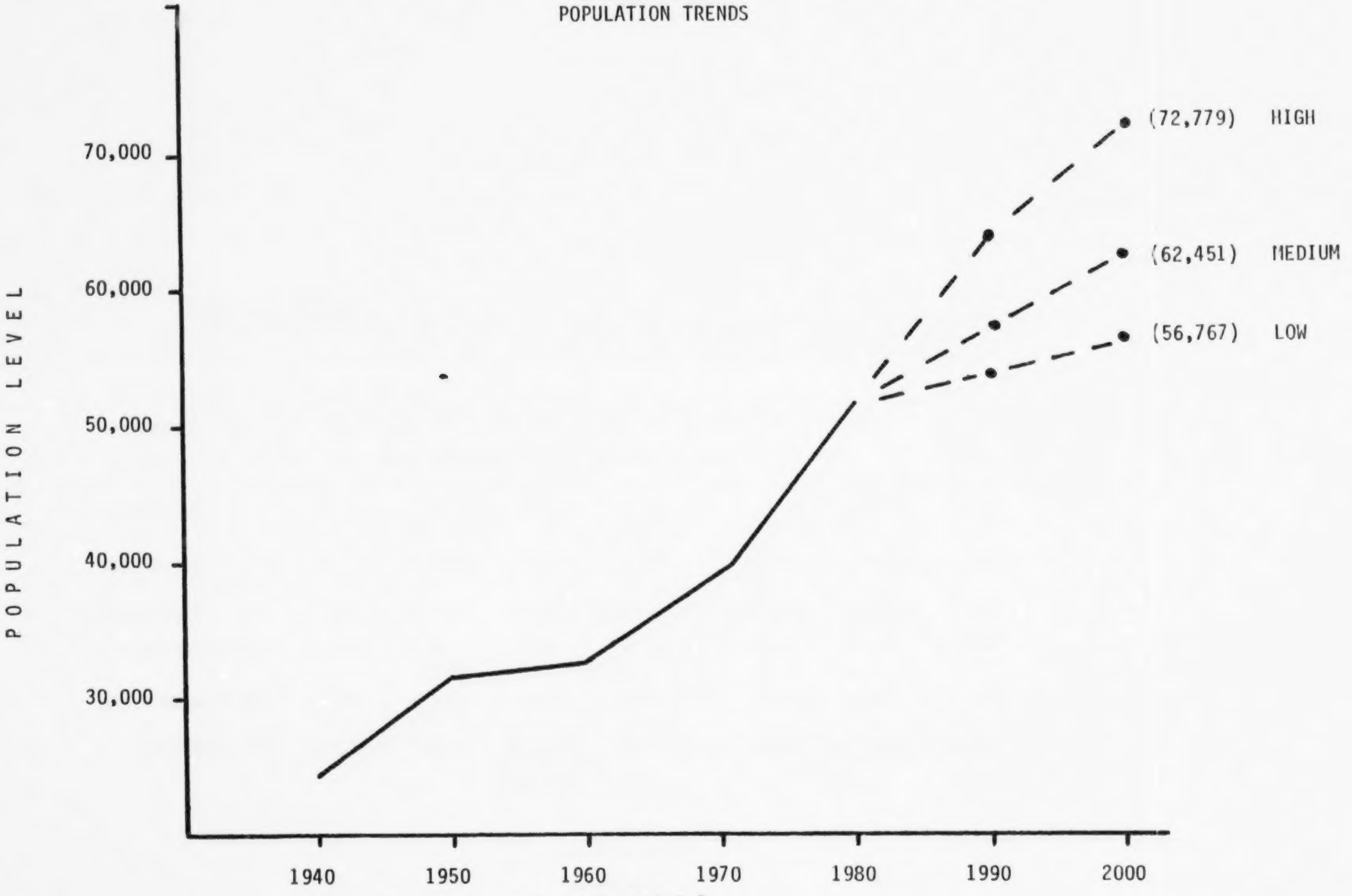
* 1979: Employment estimates by Montana Department of Administration

** Note: Population level based on expected births and deaths; Series II--U.S. Bureau of the Census. Migration levels are estimated from state vital rates.

Sources: Research and Statistical Services Bureau, Montana Department of Administation, MASS II Model; U.S. Bureau of the Census, 1980 Census of Population, Vol. 1, Characteristics of the Population, Chapter A, Number of Inhabitants Montana, October 1981.

FIGURE 6.2

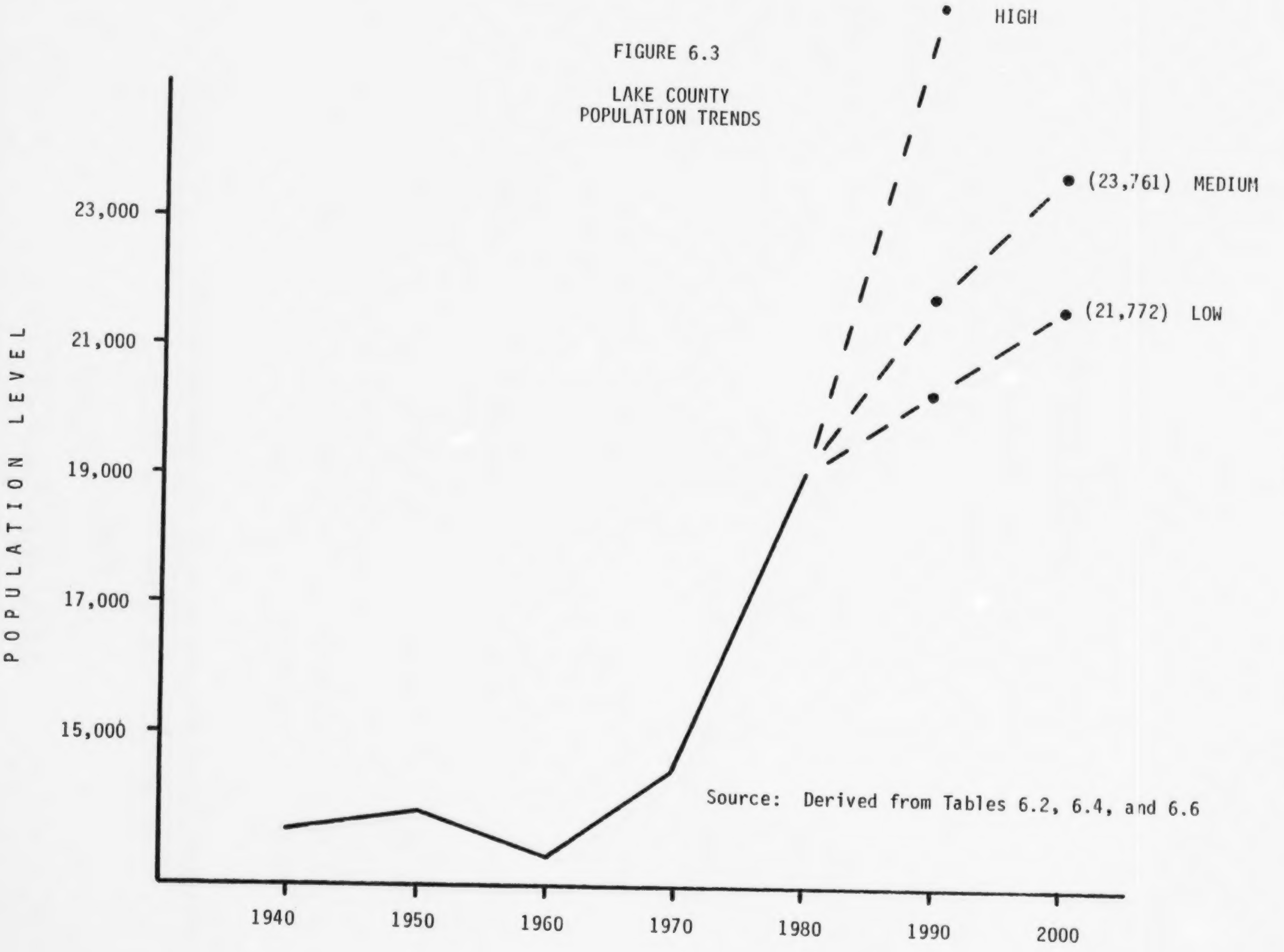
FLATHEAD COUNTY
POPULATION TRENDS



Source: Derived from Tables 6.1, 6.3, and 6.5

FIGURE 6.3

LAKE COUNTY
POPULATION TRENDS



Source: Derived from Tables 6.2, 6.4, and 6.6

TABLE 6.7

FLATHEAD RIVER BASIN TOTAL POPULATION

(Includes Portions of Missoula and Powell Counties)

	Low	Medium	High
1980	72,857	72,857	72,857
1900	76,338	81,082	92,727
2000	80,890	88,563	104,046
Increase 1980-2000	11.0%	21.5%	42.8%

	1970	1980	1990	2000
Missoula	651	1091	1347	1597
Sanders	1243	754	754	754
	1894	1845	2101	2352

Missoula and Sanders Assumptions:

1. No further decline in Sanders County
2. River basin portion of Missoula County increases at Missoula County's total growth rate.

6.4 SUBCOUNTY ALLOCATION

Whenever greater spatial detail (smaller areas) is needed, forecast error increases. National and state forecasts are generally fairly accurate. County estimates are less precise and city estimates even more uncertain. The same is true when population projections are disaggregated into age, sex or race classes.

City and county projections were made in the following manner:

1. Population data from 1950 through 1980 were collected and plotted for selected Flathead, Lake and Sanders County cities and towns.

2. Three estimates were made of 1990 and 2000 population for each locality:
    a) A "best fit" linear extension for the population plot to 1990 for each jurisdiction,
    b) A numerical extension of the 1980 population of each jurisdiction to 1990 (i.e., the absolute population difference between 1970 and 1980 was extended to 1990); and
    c) An average of a) and b) was determined.

3. A projected 1990 population was selected from one of the three alternatives. Selection was influenced by county and local economic conditions, the likelihood of annexation in each locality and information derived from interviews of local and county government officials. Working papers, plots, and explanations are available for the interested reader (contact the Research and Statistical Services Bureau, Informaton Systems Division, Department of Administration.)

Tables 6.8 through 6.10 provide the most likely spatial distribution of population through the year 2000 along with actual levels 1950-1980.

TABLE 6.8

ACTUAL AND PROJECTED POPULATION (MEDIUM SCENARIO) FOR SELECTED COMMUNITIES IN FLATHEAD, LAKE AND SANDERS COUNTIES.

Jurisdiction	1950	1960	1970	1980	1990	2000
Flathead Co.	31,495	32,965	39,460	51,966	57,128	62,451
Col. Falls	1,232	2,132	2,652	3,112	3,450	3,690
Kalispell	9,737	10,151	10,526	10,648	10,770	10,850
Whitefish	3,268	2,965	3,349	3,695	3,880	3,970
Residual	17,258	17,717	22,933	34,511	39,028	43,941
Lake Co.	13,835	13,104	14,445	19,046	21,853	23,761
Polson	2,280	2,314	2,464	2,798	3,130	3,500
Ronan	1,251	1,334	1,347	1,530	1,640	1,770
St. Ignatius	781	940	925	877	830	800
Residual	9,523	8,516	9,709	13,851	16,253	17,691
Sanders Co.	6,983	6,880	7,093	8,675	10,444	12,328
Hot Springs	733	585	664	601	590	595
Residual	6,250	6,295	6,429	8,074	9,854	11,733

Source: U.S. Bureau of the Census, 1980 Census of Population, Vol. 1, Characteristics of the Population, Chapter A, Number of Inhabitants, Montana, October 1981; U.S. Bureau of the Census, Census of Population, 1950, Vol. II, Characteristics of the Population, Part 26, Montana, 1952; projections derived.

TABLE 6.9

ACTUAL AND PROJECTED POPULATION (MEDIUM SCENARIO) FOR SELECTED COMMUNITIES IN FLATHEAD, LAKE AND SANDERS COUNTIES EXPRESSED AS A PERCENT OF COUNTY POPULATION

Jurisdiction	Population as a Percent of County Population					
	1950	1960	1970	1980	1990	2000
Flathead Co.	100.0	100.0	100.0	100.0	100.0	100.0
Col. Falls	3.9	6.5	6.7	6.0	6.0	5.9
Kalispell	30.9	30.8	26.7	20.5	18.9	17.7
Whitefish	10.4	9.0	8.5	7.1	6.8	6.4
Residual	54.8	53.7	58.1	66.4	68.3	70.3
Lake Co.	100.0	100.0	100.0	100.0	100.0	100.0
Polson	16.5	17.7	17.1	14.7	14.3	14.7
Ronan	9.0	10.2	9.3	8.0	7.5	7.5
St. Ignatius	5.7	7.2	6.4	4.6	3.8	3.4
Residual	68.8	64.9	67.2	72.7	74.4	74.4
Sanders Co.	100.0	100.0	100.0	100.0	100.0	100.0
Hot Springs	10.5	8.5	9.4	6.9	5.7	4.8
Residual	89.5	91.5	90.6	93.1	94.3	95.2

Source: Derived from Table 6.8

TABLE 6.10

LOW AND HIGH SCENARIO POPULATION PROJECTIONS FOR SELECTED COMMUNITIES IN FLATHEAD, LAKE AND SANDERS COUNTIES.

		Low Scenario		High Scenario	
Jurisdiction	1980	1990	2000	1990	2000
Flathead Co.	51,966	53,888	56,767	64,185	72,779
Col. Falls	3,112	3,233	3,349	3,851	4,294
Kalispell	10,648	10,184	10,048	12,131	12,882
Whitefish	3,695	3,664	3,633	4,365	4,658
Residual	34,511	36,806	39,907	43,838	51,164
Lake Co.	19,046	20,349	21,722	26,441	28,916
Polson	2,798	2,910	3,200	3,781	4,251
Ronan	1,530	1,580	1,633	1,983	2,169
St. Ignatius	877	773	740	1,005	1,005
Residual	13,851	15,140	16,198	19,672	21,514

Source: Derived.

Note: Totals may not add due to rounding.

6.5 AGE DETAIL

Projections of age are based on the number of males and females in each five year age group. Fertility rates are applied to the female cohorts to derive expected births--based on national and state norms. Death rates are applied to each age and sex class, again based on national and state life expectancies. The natural growth in population (i.e., births less deaths) within the area is forcast to rise approximately 9,200 by the year 2000, or about .6% per year compounding. Some continued migration is anticipated into the region--on the order of 6,000 people by the of the century. As discussed in section 2.7 (Table 2.15) most migration flows involve younger individuals. Table 6.11 combines the natural growth and migration levels by age. These projections are, however, based on old 1970 data and are subject to significant revision as current (1980) information becomes available. Required 1980 vital rate data and the more detailed age, sex and race distribution were not available for this analysis. (By 1983, all necessary data to make "sound" age projections will be obtainable.) As a result, the author suggests that discretion be exercised in the "planning use" of the age detail provided in Table 6.11. The 1980 data on Table 6.11 are from the 1980 Census of Population by broad age groups.

TABLE 6.11

AGE DISTRIBUTION
(Medium Scenario)

	0-4 yrs	5-10yrs	10-14yrs	15-19yrs	20-29yrs	30-44yrs	45-59yrs	>60yrs	Total
1980 Flathead	4,261	4,105	4,365	4,573	8,990	10,653	7,327	7,692	51,966
1990 Flathead	5,092	5,147	4,398	3,717	10,035	12,617	8,690	7,434	57,130
2000 Flathead	4,759	4,694	5,114	5,218	8,856	15,476	10,549	7,736	62,402
1980 Lake	1,715	1,544	1,620	1,791	2,821	3,354	2,630	3,583	19,058
1990 Lake	1,982	2,020	1,801	1,571	3,892	4,914	2,846	2,832	21,858
2000 Lake	1,819	1,711	1,969	2,045	3,661	5,867	4,026	2,693	23,791

Sources: MASS II Model, Research and Statistical Services Bureau, Montana Department of Administration

7 OTHER FUTURES

7.0 INTROUDUCTION

"Best guess" outlooks for the area suggest that growth will slow. New manufacturing is often portrayed as the growth source of the future. This chapter reviews the prospects*

7.1 NEW BUSINESS - OUTSIDE BUSINESS?

No one can deny that there are benefits for a state or area in capturing industries that operate elsewhere or might open branch plants in another area. Industries do create jobs, with spin-off effects in subsidiary employment for suppliers and service firms. For small towns, rural communities and one-industry areas, the arrival or exit of a major plant can have a dramatic impact on the citizens' economic well-being. Aware of these benefits, many development agencies invest immense amounts of time, money and energy in industrial recruiting, to the point where "smoke-stack chasing" activities overshadow all other economic development efforts. A strong argument has been made, however, that this approach involves excessive costs, leads to abuses and generates fierce and counterproductive rivalries among states and regions. Most serious of all, this approach may miss the mark of where the greatest potential lies for increased employment and economic growth in the United States today.

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*Note: Governor's Office of Commerce and Small Business Development, Edited Abridgment of Economic Conditions in Montana, Chapter 4 and 5, prepared by Bruce Finnie.

Pioneering research by David L. Birch (Joint Center for Urban Studies at the Massachusetts Institute for Technology and Harvard University) produced the following results:

-- Smokestack chasing--pirating firms from out-of-state or region--produces negligible over-all employment effects. The average net shift (what a state might gain over what it might lose in a given three-year period due to firm migrations between the states) was only 0.1 percent of employment change in the state.

-- The principal source of differences in growth rates among states lies in the rate of births of new enterprises and the expansion of existing ones. Expansions have the most impact, followed by births and contractions.

-- The majority of new jobs in an economy come from the birth and expansion of independent corporations, not from branch plants, headquarters or the relocation of multiplant operations.

Most importantly, in Montana and the nation, it is the small firms which contribute crucially to new job creation.

According to the Birch report, all parts of the country are losing jobs at about the same rate--eight percent per year. Replacement of these lost jobs with new ones, through either the birth of new establishments or the expansion of existing ones, is the principal factor in the determination of an area's growth or decline. Between 1969 and 1976 independent (single-establishment) firms played the dominant role in providing new jobs due to expansion, when compared with branch plants. Of all new jobs (national) generated between 1974 and 1976, at least 75 percent were created by firms less than 4 years old. Finally, small companies, those with less than twenty employees, contributed 66 percent of net new jobs in the U.S. between 1969-1976. Over half of the new jobs were in small, independent businesses.

The form of traditional state economic development programs ironically has been one of attracting large-out-of-state manufacturing firms. This is surprising in view of the fact that very little growth in either Montana or the nation has occurred in manufacturing.

Although the manufacturing oriented effort of many state programs (i.e., advertising, tax breaks, etc.) "may be justified" in the sense that manufacturing brings new money into the area, the battle is very definitely an uphill fight. First, only about seven percent of all national manufacturing firms have "tentative" plans to expand existing facilities or establish plants at a new location each year. Less than 15 percent of these plans actually materialize. Further, it is likely that development will occur at an existing site, not at a new location. Less than 10 percent of these firms ever relocate or grow to the point of having branch plants. (Of course, firms that do are some of the largest and, hence most likely to relocate.) Second, many firms don't move very far in relocation. Even though the shift has been toward the "small town," the new site is often within the vicinity of the original metropolitan area.

Remoteness often has been cited as one of Montana's most precious assets. This asset also works to Montana's disadvantage since national markets are distant and transportation costs are high. In addition, Montana's labor supplies are relatively sparse when compared with national norms. Simply put, with the exceptions of extractive industries, Montana is at a competitive disadvantage with other regions when trying to "attract" the one percent of national manufacturing firms which expand existing operations or establish new plants each year. Fostering internal expansion of existing firms, many of them resource based, is a much more practical consideration.

7.2 INDUSTRIAL LOCATION DETERMINANTS

It is difficult to determine with precision the reasons that a particular business develops at one location as opposed to another. Economic theory focuses attention on major cost components including labor, transportation, utility rates, taxes, and the like. Although such factors are important, there are many considerations which cannot be quantified. For example, nearly all industries, including the major national corporations, were at one time the result of one individual's efforts. The industries grew where the entrepreneur was, regardless of comparative costs. Another important but often overlooked fact is that the nation did not develop in a uniform manner. Early settlement and manufacturing patterns still play a major role in determining the present shifts in manufacturing activity. That is, many industries which are seeking new locations are constrained to locate in areas which are already developed. These industries frequently are linked to an already developed existing industrial complex through technology, input requirements, financial institutions, and so on.

LABOR COSTS

Average manufacturing wages in Montana (see Table 7.1) are much higher than the national norm and substantially higher than the prime manufacturing growth area, the southern states. Manufacturing employment in Montana is heavily concentrated in capital intense industries such as smelting, refining, lumber and paper mills, etc. These industries are highly productive industries and are also relatively high paying, thus driving the average manufacturing wage up. Although some may contend that union strength results in Montana's high manufacturing wages, comparisons of national wage rates in the same industries refute this claim. In fact, Montana is slightly less unionized than the national norm.

High manufacturing wages also result from the relative absence of light (labor intensive) industry in Montana, which generally pays somewhat lower wages. Again, this inflates the state's average. As a result, comparisons of average wages with other states are made with some risk.

TABLE 7.1

STATE MANUFACTURING COST COMPARISON INDEX VALUES (1979)

	Manufacturing Wage Rate	Electricity	Gas	Taxes	Transportation
Alabama	88	94	79	81	74
Arkansas	81	102	73	73	78
California	102	130	113	100	177
Colorado	98	89	67	101	116
Georgia	87	106	79	91	74
Idaho	110	52	113	99	158
Illinois	105	109	103	94	71
MONTANA	135	30	87	107	145
Nevada	105	100	101	105	162
New Jersey	101	157	134	99	90
New York	101	126	128	146	90
North Dakota	89	114	104	102	106
Oklahoma	91	94	89	95	88
Oregon	126	41	117	98	194
Pennsylvania	97	125	117	92	80
South Dakota	87	98	68	88	98
Texas	91	95	116	92	96
Utah	91	91	66	101	143
Washington	117	20	119	97	193
Wyoming	92	55	65	124	125

Source: Bruce Finnie, *Montana Screening Matrix*, Montana Department of Labor and Industry, 1979.

Wage rates vary significantly among manufacturing industries and the industry mix varies among states. Specifically, it is questionable to assert that Monana's labor index of 135 is applicable to light industry which could be expected to develop in Montana. The labor-intensive index value was estimated to be 88; labor-intensive firms in Montana pay 12% less than the national norm for those specific industry groups. Dividing the labor cost analysis into two groups with distinctly different values more closely reflects the labor conditions of Montana's atypical industrial composition.

UTILITIES

Electrical and natural gas rates exhibit far more variation than labor costs. Montana presently is a low utility rate area, particularly for electricty. As more thermal (high cost) electric generating plants are added to the less expensive hydroelectric generation base, however, the rates will rise. In addition. *Bonneville Power rates for western Montana will increase within the next few years as revised pricing policies are adopted. It is still likely that Montana will have a slight cost advantage in this area in the longer term*, but the advantage will not be as significant as it is today. Although utility rates are usually not a major cost item for most manufacturing companies, they are very important for a number of Montana industries: aluminum, phosphorus, paper, and cement. A number of

Montana plants have changed or are changing the fuel and technology used in an effort to lower costs.

TAXES

The effect of taxation on manufacturing growth remains a hotly debated consideration, even though overall business taxes usually constitute less than two percent of total production cost at the national level. Although taxes paid per $100 of profits vary substantially from state to state, the relative cost of taxes remains relatively low, probably less than a one percent variation between states. A recent study by the Academy for Contemporary Problems, Columbus, Ohio, indicates that total business taxes are generally about 30 percent lower than the national average in the southern states and that Montana is slightly higher than the national norm. However, these figures are based on estimates and do not reflect differences in the relative profitabilty of businesses from state to state. The overall tax burden (total federal, state, and local taxes as a percent of state income) in Montana is shown in Table 7.1.

Tax breaks and other inducements that states offer to attract industry are losing their appeal. A growing number of economists condemn them as wasteful and self-defeating. State officials who defend them confess to feeling trapped in an escalating race to attract and keep corporations. The giving is generous. States offer a cornucopia of tax credits, exemptions, rollbacks, reductions and deferrals. Many also tout industrial revenue bonds and municipally owned industrial parks. Lately, New York has led the sweepstakes with 27 inducement programs.

But a 1980 North Dakota study found that a major exemption that the state has offered for more than a decade has had negligible influence. And a study for the Economic Development Administration concludes there isn't any relationship between the level of state taxes and the creation of jobs and investments.

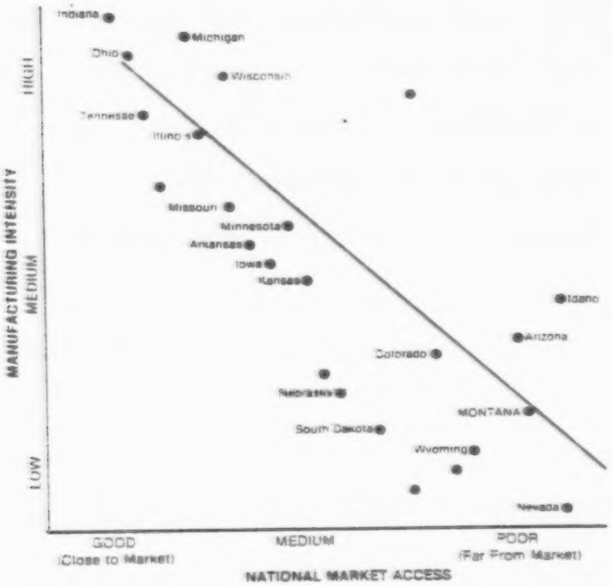
TRANSPORTATION

Transportation costs generally account for about two percent of total manufacturing cost although the variation between industries is significant, ranging from a low of less than ½ percent to over seven percent, depending upon the product. Estimates of overall access to national markets suggests that Montana's relative transportation costs may be as much as 50 percent higher than the average state and nearly 100 percent higher than most states in the "manufacturing belt."

Figure 7.1 illustrates the relationship between market access for landlocked states and manufacturing intensity. Market access is defined as an approximation of the relative transportation costs of serving the entire nation from one state. Manufacturing intensity is defined as the percent of state income that is related to manufacturing income.

FIGURE 7.1

MANUFACTURING INTENSITY AND MARKET ACCESS



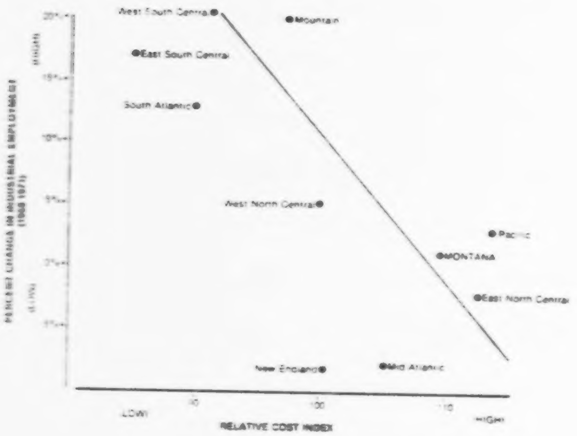
Source: Working Paper Series, #2, Office of Commerce and Small Business Development, 1978.

STATE OVERVIEW OF COSTS

In order to present the data in a more meaningful way, the four cost components (labor, utility, taxes, transportation) were averaged based on the relative costs of manufacturing by using the national input/output tables. For example, labor costs represent 81 percent of the overall index, utilities 6.0 percent, and taxes and transportation 6.5 percent each. This composite index, computed by Census region, is shown in Figure 7.2, along with manufacturing growth. As can be seen, the southern and mountain states have experienced more rapid growth and have relatively lower costs. Conversely, the old maufacturing belt states and the Pacific region have experienced slower growth and have relatively higher costs. Montana's costs are also quite high and growth has been rather slow. But, as was mentioned earlier, there are far more determinants of manufacturing activity than simply labor, energy, transportation costs, etc. Several such factors are discussed below.

FIGURE 7.2

INDUSTRIAL GROWTH AND COMPARATIVE COST



Source: Bruce Finnie, Montana Department of Labor and Industry, 1979.

OTHER GROWTH DETERMINANTS

Manufacturing firms most often locate in areas where they have both an immediate market and an immediate source of inputs including specialized labor, technical assistance, large financial institutions, and the availability of related manufacturing firms and shops. Generally, such advantages are found in large urban areas.

There are very few significant linkages within the Montana economy. With the exception of the mining, wood products, and, to a limited degree, the agricultural complex, manufacturing firms in the state are virtually independent. They are not functionally tied through internal sales and technology.*

Relatively few national manufacturing firms are tied to the natural resource base. However, in Montana, a raw material orientation has been the rule rather than the exception. Nearly 75 percent of manufacturing activity in the state is directly linked to the resource base, a proportion which is probably higher than nearly any other state.

The transportation cost of raw materials is the dominant location factor in many Montana industries, since it is not feasible to transport raw ore, uncut timber, etc., for any great distance. It becomes necessary to at least partially process the material to reduce cost.

After a firm has determined a suitable area (region or state) for relocation, based on comparative costs and interindustry linkages, it will begin to search out individual communities which meet its needs. Nationally, manufacturing firms consider the following community attributes most important when relocating, listed in order of importance:

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* These conclusions are based on the 1975 Montana Input/ Output Tables developed by Bruce Finnie and Jerry Flemming of the Montana Department of Community Affairs, Research and Information Systems Division.

(1) fire protection
(2) contract trucking
(3) police protection
(4) trained worker availability
(5) unskilled worker availability
(6) air service (passenger)
(7) tax incentives (local)
(8) industrial zoning

National firms also regard the following plants site features as most important:

(1) interstate highway access
(2) natural gas service
(3) rail service
(5) sewage processing
(6) solid waste disposal
(7) soil load-bearing capabilities
(8) air freight service
(9) industrial parks

Sources: Bruce Finnie, Montana Screening Matrix, Montana Department of Labor and Industry, 1979.

MANUFACTURING POTENTIAL

Three hundred potential industries were ranked in terms of development feasibility in Montana. The ranking was based on a variety of characteristics including labor requirements and costs, transportation costs, utility costs and external market considerations. Although the procedure, called a "screening matrix," allows for a systematic comparison of development potential by industry, it is by no means a precise measure. It is capable only of revealing general patterns or trends.

Many of the firms which already exist in Montana scored the highest, which is expected. The following comparison of selected firms (short list) illustrates the general degree of feasibility as defined by the matrix. (See Table 7.2)

- Group I
  - Best
    - Meat Processing
    - Animal Fat Oils
    - Cardboard
    - Building Paper
    - Furniture
    - Pulp
    - Copper/Lead/Zinc
- Group II
  - Good
    - Plywood
    - Prefab Buildings
    - Paper Mills
    - Aluminum Castings
    - Farm Machinery
    - Grain Products
    - Paper Containers
- Group III
  - Fair
    - Clothing
    - Greeting Cards
    - Hardware
    - Hand Tools
    - Electronic Components
    - Surgical Supplies
    - Rolling and Drawing
- Group IV
  - Poor
    - Tires
    - Iron Foundries
    - Power Transmission equipment
    - Construction Machinery
    - Railroad Cars
    - Motor Vehicles
    - Engines

Goups V
    Bad
- Turbines
- Aircraft
- Textile Machinery
- Refrigerators
- Machine Tools
- Steel Works
- Ship Building

It should be noted that a higher score does not necessarily mean that the industry will succeed in Montana but only that it may have an advantage relative to other industries. For example, meat processing was rated high in the matrix but many such firms have failed in Montana even with good management. The type of beef slaughtered in Montana is very different in nature than that processed in Nebraska, Iowa, etc., where larger markets also exist. Pulp mills scored high, but future development of this industry is possibly constrained by limited inputs (i.e., wood residue inputs) and environmental considerations. In other words, processing facilities would probably have to expand before further pulp development could occur.

In addition, many industries which scored high in the matrix (long list) have limited markets. For example, lime, petroleum coal products, dairy, and concrete products were rated high but are obviously not products with a national market orientation. As a result, further screening will be necessary to eliminate those sectors which require substantial local markets if it is the desire of a community to promote regional or national manufacturing firms.

TABLE 7.2

DEVELOPMENT POTENTIAL BY INDUSTRIAL GROUP COMMON CHARACTERISTICS BY SCORE

Group	Employment Level	Wages	Value Added	Transportation Costs	Energy Use	Growth Rate	Market	Raw Material Orientation	Urban Orientation	Linkages	Other
I Best	Medium	High	Low	High	Medium	Low	Regional	Dominate	Low	Backward only	Natural Resource Orientation
II Good	Low	Medium	Medium	Medium	Low	Medium	Regional	Not Important	Low	Usually Backward	Generally Footloose
III Fair	Low	Low	High	Low	Low	High	National	Not Important	Medium	Not Important	Footloose
IV Poor	High	High	High	Low	Medium	Low	National	Not Important	High	Forward & Backward	Market Orientation
V Bad	Very High	High	High	Medium	High	Very Low	National	Not Important	High	Forward & Backward	Market Orientation

DEFINITIONS:

Forward linkage: a firm that tends to locate near the consumer of its product has a forward linkage.

Backward linkage: a firm that tends to locate near its materials supplier has a supply or backward linkage.

Concentration dependence: a firm that tends to locate near other firms within its own major industrial category, through sharing facilities and services, has a concentration dependence.

Urban orientation: a firm that tends to locate near metropolitan and urban areas because of the large available labor force, financial institutions, etc., is said to have urban orientation.

Raw material orientation: a firm that tends to locate near the source of its primary natural resource input has a raw material orientation.

Source: Montana Screening Matrix, Montana Department of Labor and Industry, 1979.

Table 7.2 shows general industrial characteristics or tendencies which result from the industry specific ranking of all 300 manufacturing possibilities. The following conclusions were drawn from these general tendencies. The order is of no importance.

1) Montana's best development potential is probably in the resource based industries, even though the overall growth rate is low and transportation cost high with respect to the value of the product.

II) Value added is much higher in those sectors which have a strong market orientation. Montana may find it necessary to focus development efforts on medium value added products. High value added products generally have high employment levels, national markets and a strong urban orientation which may preclude such development here.

III) With the exception of the resource based industries, manufacturing firms which appear to have a realistic chance of development in Montana typically will pay somewhat lower wage rates than large scale firms.

IV) The high employment requirements of industries in the fourth and fifth categories will probably preclude such development in Montana. These firms also are slow growth industries and have a high urban orientation. Montana should focus on industries employing relatively few workers.

V) The fastest growth industries are generally footloose, that is, not tied to a natural resource base or market orientation. Wages and employment requirements generally are lower than average. Transportation costs also are relatively low. These industries appear to be realistic growth candidates for Montana.

VI) Montana should focus on industries which have a relatively low degree of urban orientation. The linkage and market structure of these industries present fewer constraints for development.

VII) Industries with agglomeration economies (i.e., linkages and scale effects are important) are not likely growth candidates in Montana.

VIII) The industries with the highest potential for development generally appear to have regional markets.

IX) Even though the highest two development categories have relatively high transportation costs, weight is lost during manufacture which tends to compensate for Montana's transportation disadvantage. However, in some cases developers may wish to focus on industries which have relatively low transportation cost, i.e, the footloose industries.

X) With the exception of the resource based industries, the development potential for Montana appears to be in industries which are relatively low energy users.

XI) National manufacturing growth within the past two decades has been found in "footloose" industries, which usually have relatively low employment requirements, lower than average wages, high value-added characteristics, a national market, and relatively low transportation costs. Examples of such industries include electronic components, hardware, surgical instruments, truck trailers, fabricated metal products, clothing, etc.

XII) Although there is no specific information available, it appears that about 40 percent of the manufacturing employment expansion in Montana since 1960 has been in this light-industry group, i.e, the footloose firms.

DEVELOPMENT OPTIONS: A SUMMARY

Economic development is not an optional activity for state and local governments. By action or inaction, interest or indifference, governments make daily decisions that have profound effects on the lives of their citizens and the health of their communities.

Despite its central importance, economic development has long been a source of confusion in state capitals. No accepted textbook of its administration exists; the literature is sparse. The relationship between the public and private sectors is clearly intertwined but poorly understood.

Most economic development officials believe their primary function is to help private industry make and implement investment decisions. To that end, they have pushed their legislatures to adopt measures, like tax incentives, which demonstrate to business the state's "positive attitude" and enhance its comptetitive position vis-a-vis other states. A growing number of people from all walks of public and private life is beginning to challenge seriously this prevailing view.

In their desire to impress business and grab the competitive edge in the fierce struggle for new and footloose firms, many states have adopted what the Wall Street Journal calls a "candy store of incentive programs." These promise industries special tax and financial treatment--from outright exemptions on property taxes to special loan and bond programs. Increasingly, however, these incentives, like their sister philosophy "smokestack chasing," are coming under strong criticism from many fronts: from liberals who oppose special breaks for business; from conservatives who, in a Proposition 13 environment, are demanding fair and more equal tax systems; from public officials who see the trend spiralling out of control; and, from a growing number of economists who believe, simply, that the incentives don't work.

7.3 THE CAPITAL ISSUE

Is Montana capital short? a mini-survey was conducted to assess the perceptions of private businesses concerning capital access. Thirty-five small manufacturing firms selected by the Govenor's Office of Commerce and Small Business Development were asked to rank their business related problems in order of importance. The response was also low; only 16 firms returned the form. As a result the findings should be viewed with considerable caution. However, the majority of the Montana firms who responded tended to rank capital availability as one of their more important business problems. Inflation was ranked highest and management problems lowest; a pattern which has been consistent with a variety of national surveys.

National survey results, however, are dependent on current economic conditions. The National Federation of Independent Business prepares a quarterly survey asking its members to rank their problems by order of importance. The results of the survey have varied over time, with taxes and inflation normally dominating the list. During the 1974 oil embargo, for example, fuel and material shortages ranked very high. By contrast, interest rate and financing tend to become more important during cyclical credit crunches. Even during the depths of recession, an inadequate demand for product was not ranked as an important problem by most firms. Government regulation seemed to take on greater importance during the last recession, becomming even more important than inadequate demand.

Returning to the Montana business survey, all firms indicated that they had required conventional financing within the last year. Most of them (about 70%) were successful in their attempts to obtain the loan amount that they sought; however, only half received the desired terms. Like the bankers (next section), nearly all the firms cited lack of equity as a major bottleneck to business expansion. It is important to note that these firms were not "new" businesses and all seem to have an established business track record, i.e, they have survived the first few critical years when approximately 50 percent of all businesses fail.

THE BANKERS' VIEW

A second questionnaire shown below was mailed to 153 Montana banks to determine how bankers perceive the capital shortage issue. Their responses (125 banks responding) are shown below:

BANKERS' QUESTIONNAIRE

1. Is procuring financing a major problem for existing (expansion) or prospective businesses in your community?

24% YES 76% NO

2. Are you satisfied with you bank's ability to make loans to qualified businesses?

83% YES 17% NO

If not, why____

3. In your opinion, is there a capital shortage in you community?

38% YES 62% NO

Would your answer in this question have been different 18 months ago?

17% YES 83% NO

4. Have you had any business loan requests that you have had to turn down because of the nature of the loan (size and duration) and/or lack of your ability to find a buyer on the secondary market?

43% YES 57% NO

If so, how often does his happen?____________________

5. Have you had any business loan requests that you have had to turn down solely because the borrower did not have sufficient equity?

93% YES 7% NO

If so, how often does this happen? (frequently).

The vast majority of bankers do not believe that there are any major problems in securing financing. On the basis of the open-ended questions (number 2, 4, and 5), if difficulties arise they are most likely the result of lack of experience (i.e., a new business), a perceived lack of competence or insufficient equity.

CAPITAL MARKET IMPERFECTIONS

How do capital shortages affect economic development? Many young firms have a difficult time in finding financial assistance. Higher risk ventures go unfunded because of the absence of market mechanisms that could minimize risk to potential capital suppliers. Financial intermediaries do not have accurate or sufficient information about certain kinds of firms. Steeper transaction costs for making and following some loans keep certain businesses out of the credit queue altogether. Some financial institutions with monopoly power raise funding barriers higher than they would be under competitive conditions. Borrowers can be discriminated against on the basis of sex, race or politics. And government regulations in capital markets create unintended distortions.

There has been a number of studies examining the costs and availability of capital to small firms. The most recent empirical study, by Kieschnick and Daniels, reviewed previous studies and reported on new research based on the FTC Quarterly Financial Reports. The conclusion of the study was straightforward: for manufacturing firms below $1 million in assets, there exists a major discrepancy between profitability and the existence of barriers to obtaining long-tem debt and equity. This result is consistent with most previous studies of small business finance, which found that barriers exist for quite small manufacturing firms seeking long-term debt and equity. No acceptable evidence has been produced showing undeserved barriers for service or commercial firms, or for medium-sized firms.

Clearly, sufficient venture capital is necessary before any business can borrow money from conventional lending institutions. A sound equity position or borrowing base (value in excess of claims or liens against property) is one of the more important prerequisites for obtaining commercial bank financing. For big loans this is probably every bit as important as an established business record.

8 SUMMARY

The projections (medium scenario) suggest a positive future for the area. The analysis indicates that timber and tourism will continue to generate jobs, contributing equally to growth. More tourism jobs will be created than timber but, the income impact of timber will be comparable to tourism. In contrast, primary metals which was the greatest single source of growth over the past decade, is not expected to grow very much in the future. Total employment growth is expected to exceed natural population expansion, resulting in continued in-migration. Overall growth rates in both employment and population will, however, be less than the dramatic surge experienced in the 1970s. Basic employment levels are expected to rise slightly, a favorable comparative change in view of the national trend. Even though nonbasic employment growth probably will slow somewhat when compared to the "boom" during the 1970s, overall employment growth is likely to be strong.

Although the area's specialization in natural resource industries may give the region the illusion of being underdeveloped, it is not--it just has developed in a different way than the manufacturing areas of the nation. This does not imply that increased industrial diversification, when possible, would not benefit the area--particularly in certain cases--but it does imply that the overall economy of the region is doing well and should prosper in the future.

To be sure, industrial diversification will occur. This metamorphosis, however, will be as slow as it was elsewhere and will be determined by economic feasibility rather than wish. But, most importantly, if any of the major natural resource or supporting sectors falter, the economic gains of the 1970s may quickly be lost.

Flathead Valley is fortunate to be endowed with timber, and extensive agricultural lands. The future of the Valley will rest on these riches and upon the decisions which affect their use. Many crucial trade-offs will exist in the future. For example, a national policy of tight money would benefit the nation through reduced inflation. However, such a policy makes it more difficult to borrow money--directly impacting the housing and wood products industries.

Timber cutting and mining policies are even more complex when environmental costs are weighed. No simple solutions exist in such complex situations, but Valley residents should insure that their input is made known to national and state decision makers, private and public, when the vitality of the economy and the quality of the environment are at stake.

DEVELOPMENT EFFORTS

Almost all of the growth since 1970 resulted from the expansion of existing primary or basic industries. This suggests that existing firms and industries should not be forgotten in any local development efforts. State experience has shown conclusively, that efforts to attract outside industry are not successful. Local development agencies, the Chamber of Commerce, and banks, working hand-in-hand with existing firms can help stimulate sound, clean and acceptable growth. Successful efforts will be targeted on the area's true resource base--timber, tourism and agriculture. The author hopes that the information provided in Chapter 7 will assist developers in targeting such efforts.

Development is a long-run goal requiring the devoted attention of business leaders over an extended period of time; often years before success is actually seen. Long-term efforts do work when the focus is on expanding existing operations and assisting new local firms to grow and mature. Montana, the Flathead Valley, and the nation need capital to grow and prosper. Local venture capital efforts by business and the financial community present one good option within the area to help maintain balanced economic growth. The future will be determined by today's investments.